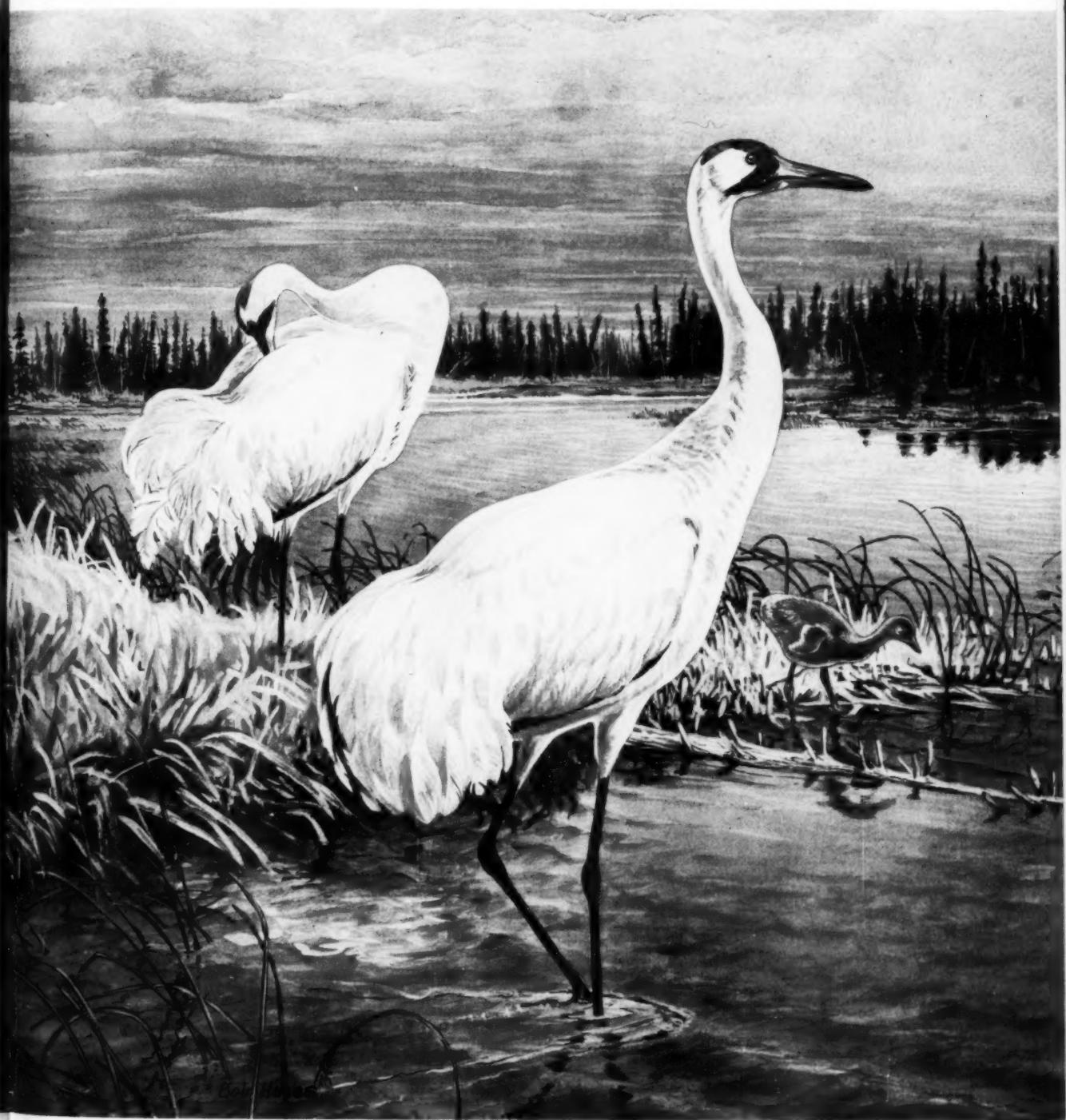


American FORESTS

MARCH 1956

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Bob Miller

Our Vanishing Species . . . Page 14

Not "How Big?" But "How Good?"

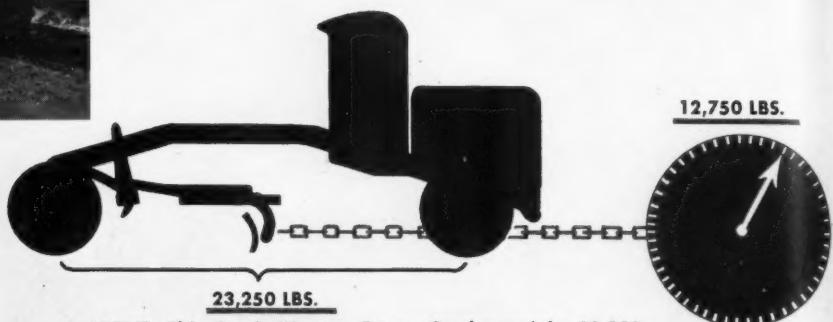


The ability of any motor grader to do hard cutting, and move big blade loads of material in the lower gears, where heavy work is done, depends entirely upon the amount of weight carried on *driving wheels*. Total weight has nothing to do with it.

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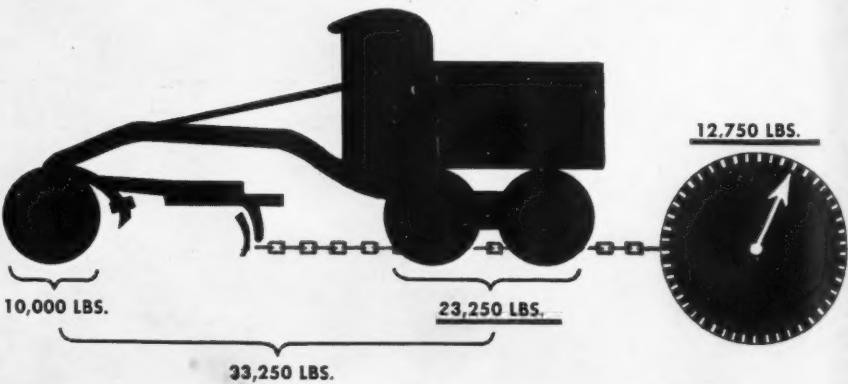
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BELOW: To obtain the same blade pull, an ordinary motor grader would have to carry 23,250 lbs. on its rear drivers; PLUS about 10,000 lbs. on its dead front end, for a total of 33,250 lbs.



There's more to the story. All-Wheel Steer . . . another exclusive Austin-Western feature . . . makes the machine twice as maneuverable as graders with front steer only; while the Controlled Traction made possible by the teamwork of All-Wheel Drive and All-Wheel Steer moves more material . . . moves it farther . . . moves it faster. Your nearby Austin-Western distributor will be glad to tell you the whole story of "The Power Graders That Have Everything."

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AUSTIN-WESTERN WORKS
CONSTRUCTION EQUIPMENT DIVISION
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Construction Equipment Division



AURORA, ILLINOIS

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The forest resources of the South are of inestimable importance to the economy of the region and our nation.

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**Industrial Department
Seaboard Air Line Railroad Company
Norfolk 10, Virginia**



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American FORESTS

PUBLISHED BY THE AMERICAN FORESTRY ASSOCIATION

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Editor

Betty Fadeley
Assistant Editor

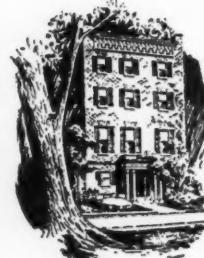
James J. Fisher
Art Director

Volume 62, No. 3 | March, 1956

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COVER: Whooping Cranes by Bob Hines



The AFA

The American Forestry Association, publishers of *American Forests*, is a national organization—Independent and non-political in character—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and the part they play in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

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Letters

January Issue

EDITOR:

I cannot resist the impulse to write you saying that in my opinion the January issue of AMERICAN FORESTS is one of the best that I have ever seen. I am speaking of it from the standpoint of the ordinary reader who necessarily makes up the bulk of our circulation. The subject matter is interesting and the general readability—if that is a properly descriptive term—is exceptionally high.

Karl T. Frederick
Kobbé, Thatcher & Frederick
61 Broadway
New York 6, New York

EDITOR:

I just received the January issue of AMERICAN FORESTS, and was pleased to see your front cover devoted to a striking photo of soil and water conservation work in the form of a raindrop, referring to the recent Watershed Congress.

I did not find any explanation of the photograph anywhere in the magazine. Just in case you do not have the information, may I volunteer the following:

The photo shows a portion of the Mark N. Witmer farm near Dalmatia, Northumberland County, Pennsylvania, in the 2,000 acre Stone Valley Watershed inhabited by Pennsylvania Dutch farmers. Mr. Witmer has been active in the affairs of the Northumberland County Soil Conservation District since its formation in 1943, and has been largely responsible for the progress that has been made in this small watershed. Nineteen out of twenty-one farmers are carrying out conservation plans made with the assistance of Soil Conservation Service technicians. The other two farmers are attempting to do the job as nearly as they can without requesting district assistance.

D. Joseph Sacco
Chairman, Keystone Chapter
Soil Conservation Society of America
Sunbury, Pennsylvania

We Stand Corrected

EDITOR:

Please refer to the photo I submitted which was selected for use in the January issue of "our" magazine. Through error, either on my own or other, the diameter of the tree was given in the caption as twenty feet. Actually, it is only twenty inches I am sorry to report. Sure hope you don't get too many letters pointing out this error.

Edward C. Cordon
622 Pierce Avenue
Baton Rouge, Louisiana

EDITOR:

On page 64 of the January 1956 AMERICAN FORESTS magazine you have a picture taken by E. C. Cordon for which you paid \$10. I don't blame you a bit for paying the money for that picture. I would also gladly pay the same for a picture of a loblolly pine tree 20 feet in diameter as the caption under the picture states.

May I suggest that you add the 20 foot diameter loblolly pine to your list of giant

trees. I spent two years in the South and never ran across a tree that large of that species.

Paul R. Flink
Forest Entomologist
Department of Conservation
Lansing 26, Michigan

Colonel Greeley

EDITOR:

Your article on Colonel Greeley in the January issue of AMERICAN FORESTS was a fascinating glimpse of Colonel Bill at work. I was privileged to know Colonel Greeley only during the last few years of his life, but this was enough to give me an indication of his enormous energy and prodigious achievements.

One point that you mention on page 46, is particularly interesting. It concerns Colonel Bill's activity during the 1930's in opposition to the Reciprocal Trade Agree-

ments. During the fall of 1954 Colonel Bill participated in a seminar of mine dealing with trade in forest products, during which he took a very outspoken free-trade position. When I asked him whether he has advocated the same views during his activity for the W.C.L.A., he gave me a wry grin which left me in doubt as to whether he had changed his mind since the 30's or whether he had acted then merely as the conscientious servant of the association. Perhaps you might be able to shed some light on this point.

Herbert I. Winer
Instructor in Forestry
Yale University
New Haven 11, Conn.

Bernard De Voto

EDITOR:

Stewart Holbrook writes of Bernard De (Turn to page 50)

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PRECISION-BUILT FOR PEAK PERFORMANCE

GUIDE LINK—Beamed rivet holes give precision fit, eliminate stretch and "chain slop" for less wear, longer service.

ROUTER—Precision ground, chrome plated high grade steel means longer life, less sharpening.

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RIVET—Large head plus hardened bearing surface helps maintain chain tightness, assures longer life.

A black and white illustration of a logger standing next to a large tree, with a chain saw in hand, is shown at the bottom left.

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HORNADAY . . .

New Executive Vice President

FRED E. Hornaday, secretary of The American Forestry Association for 25 years, last month was named executive vice president in a reorganization move by the Board of Directors to further strengthen and define administrative and professional functions. Creation of the new post clears the way for the appointment of a Chief Forester in a department that will devote its full time to the activation of AFA's Program for American Forestry.

The reorganization move followed the announcement by Executive Director-Forester Lowell Besley that he will pioneer in the establishment of a new forest research program under the auspices of the Pulp and Paper Research Institute of Canada. (See opposite page).

"This business of forestry has become an immense proposition," President Don P. Johnston commented in explaining the reorganization program. "We've got 15,000 foresters on the job today and more coming all the time and they've got action programs in full swing on the federal, state and local levels. A Chief Forester to be selected shortly who will devote his full time to our forestry programs has become mandatory and an executive vice president who will handle all management duties other than in the forestry field. In Fred Hornaday we feel we have the right man for this management job. He has been instrumental in stepping up the association's income every year for 25 years."

Mr. Hornaday, a former field secretary for the Chamber of Commerce of the United States, brings a business background to his new assignment. A descendent of William T. Hornaday, former director of the New York Zoological Gardens, he was born in Indianapolis, Indiana. "Who's Who" reveals that he is a graduate of the University of Pennsylvania where he specialized in commerce and finance. When he joined

the staff of The American Forestry Association, at that time under the directorship of Ovid Butler, he inaugurated many promotional activities that brought the association and its work to the attention of the American public. The advertising program of AMERICAN FORESTS magazine was launched by Mr. Hornaday and has grown steadily culminating with the biggest advertising year in history in 1955.

A staunch defender of national forests and parks, he is an enthusiastic outdoorsman and an ardent Trail Rider having taken fifteen of them in the last few years in every section of the country.

In forestry, Mr. Hornaday has always been most concerned and interested in hardhitting fire prevention campaigns and in giving recognition to outstanding work along these lines. He has served as secretary of the American Forest Fire Medal Board for many years and is presently a member of the Forest Committee of the National Fire Protection Association.



Fred E. Hornaday

Widely-known throughout the country as the result of his travels in carrying on the work of AFA, Mr. Hornaday is personally acquainted with more members of the association than any other staff member. He has lived in Washington most of his life where he has been prominent in civic affairs. An active Presbyterian, his church activities have carried him through the offices of deacon, trustee and elder. He is married and the father of two sons. Years ago he identified himself with the Boy Scouts and other youth activities and continues to have an abiding interest in all such matters. He makes his home at 3508 Runnymede Place N.W., Washington, D.C.

"INSIDE AFA"

TWO special issues of *American Forests* are planned for April and May. In view of its 80th anniversary and expanding programs, the April issue will be woven around the growth and development of The American Forestry Association. This "Inside AFA" presentation will feature Dr. S. T. Dana's recently completed history of The AFA first published in the Journal of Forestry, a cover story on the contribution of President Don P. Johnston to the organization, a "Meet the Staff" pictorial feature which will introduce members to those responsible for various program activities in their

organization, and other features on AFA activities.

The May issue will present the complete record of the first southwide Forest Fire Prevention Conference scheduled for April 13 and 14 in New Orleans, Louisiana. With the sponsors of this project allocating \$5,000 to *American Forests* to place this report in the hands of law enforcement officials, educators and others in southern states, there is every indication that both the conference and the special issue will strike a hard blow at the wildfire menace and thereby implement the Number 1 protection plank in AFA's program.



Lowell Besley

LOWELL BESLEY, executive director-forester of The American Forestry Association for the last three years, has resigned effective June 1 to head up a nation-wide forest research project in Canada under the auspices of the Pulp and Paper Research Institute.

In announcing his decision to pioneer in this new project underwritten by the entire pulp and paper industry in Canada, Mr. Besley told the Board of Directors that this is a "challenge that I cannot turn down." As outlined by Mr. Besley to the Board, he will devote his first year to extensive travel throughout the provinces of Canada in pinpointing the major research needs. The second year he will organize an Institute research staff and carry on such research assignments as are necessary.

"Good forestry knows no boundaries," President Don P. Johnston said" in accepting Mr. Besley's resignation. "Recalling our Mr. Besley's previous service at the University of British Columbia and his general professional competence, our Canadian friends have selected him as an ideal man to head up this important undertaking. As a layman's forestry association, AFA must not be selfish when our foresters are elected for major professional tasks. Mr. Besley has our full support in this new undertaking and we know he will bring the same drive and aggressiveness to it that he has to AFA forestry programs in the last three years."

Karl T. Frederick, New York at-

BESLEY . . .

To Pioneer in New Project

torney and the Board member with the longest period of service to AFA, also warmly praised Mr. Besley's aggressive leadership in activating the association's new Program for Forestry and wished him every success in his new venture.

Mr. Besley joined the association staff after serving as dean of the Department of Forestry at the University of British Columbia. Participation in AFA's Higgins Lake Conference that set up the agenda for the Fourth American Forest Congress marked his first official action as director-forester and he also played a prominent role in the Congress. Since that time he has devoted his full efforts to launching the activation of the program for forestry that grew out of the Congress. He spearheaded the successful effort to amend mining laws that were creating serious abuses on public lands, supported the forestry programs of newly-appointed Forest Service Chief Richard E. McArdle, pushed for forest insurance programs, and this year took direct aim at the problem of wildfires in the South in helping to organize the Southern Forest Fire Prevention Conference of which he is general chairman.

During his remaining time with AFA, Mr. Besley will devote the major portion of his time to this first southside conference on woods burning in an effort to implement the Number 1 Protection Plank in AFA's program. Scheduled to be held in New Orleans April 13 and 14 it is being sponsored by AFA and the Louisiana Forestry Association and nine other southern organizations in an effort to curb the wildfire menace in southern states.

Mr. Besley, the son of former Maryland State Forester Fred Besley, is a native of Baltimore and received his secondary education there. He was awarded his B.S. degree in agriculture (forestry) from Cornell University in 1931. A year later he grad-

uated from the Yale University School of Forestry with an M.F. degree "cum laude."

Following teaching assignments in the forestry schools of Pennsylvania State College and West Virginia University, Mr. Besley went to the University of British Columbia in 1948 to head up and organize that school's forestry department. He marshalled the support of the university, the Canadian government and industry to develop a strong forestry unit that was created a full faculty of the university two years later. Additions to the teaching staff and all facilities of instruction have made it one of the finest forest schools in North America.

Few men in forestry have Mr. Besley's broad background of experience in both the United States and Canada at a time when both countries find they have many interlocking problems in the forest management field. Also, Mr. Besley's outstanding academic career in North American forestry schools has been supplemented by tours of duty in both the public and private forestry fields.

In the private forestry field, Mr. Besley has served as a forestry consultant for The American Forestry Association; consultant for C. D. Schultz & Associates, forestry consultants in British Columbia; field assistant for Franklin W. Reed, consulting forester in Maryland; and Chief-of-Parties for the management inventory of the Canadian Western Lumber Company.

In the academic world, Mr. Besley's career includes: 1934 to 1936, instructor of forestry at Pennsylvania State College; 1936 to 1937, assistant professor of forestry, Pennsylvania State College; 1937 to 1938, assistant professor of forest management, West Virginia University; 1938-1942, associate professor of forest management, West Virginia University.

THE AL SARENA CASE

by BETTY FADELEY

AL Sarena Mines, Inc., complied with the requirements of the federal mining law, then in existence, and therefore was granted patents on 15 contested claims on the Rogue River National Forest in Oregon, according to testimony of Under Secretary of the Interior Clarence A. Davis before the Congressional subcommittee investigating the Al Sarena mining patents.

As reported in the February issue of *American Forests*, this Congressional investigation was instigated by charges from Administration critics that the gold and silver content on these claims was insufficient to justify the granting of patents; that Al Sarena wanted to "mine" the timber on these claims rather than the minerals; and that if the Al Sarena case was allowed to stand, our national forest system would be threatened.

For almost five months, witness after witness had been called before this joint subcommittee in an attempt to substantiate many public allegations by Administration critics, that the Interior Department was guilty of misconduct by circumventing customary procedures in granting the Al Sarena patents, and that Secretary McKay was giving away our natural resources. However, at long last, Under Secretary of Interior Davis, the former Interior Solicitor under whose direction the patents were granted, finally was asked to testify.

At the outset of his testimony Secretary Davis assumed full responsibility for the decision to grant the patents and said, ". . . the matters here involved are not matters of discretion or of political action, but are matters of law and evidence. For that reason, for a very great many years the authority to decide appeals with relation to public lands has been vested in the Solicitor of the Department. His opinions on these matters are final. They are not reviewed by the Secretary unless the Secretary specifically requests it, and

they are not in ordinary course ever presented to the Secretary at all. I should like to make very clear, therefore, that Secretary McKay has had no part in this sequence of events..."

Secretary Davis laid before the subcommittee a detailed account of the Interior Department's actions in the Al Sarena case. In his introductory statement Secretary Davis said, "These claims and the problems they presented were left pending by the preceding Administration. They constituted a matter which had been going through the various levels of bureaucracy of the Department of the Interior for more than five years before I ever heard of them."

Citing the federal law which governed his decision, Secretary Davis testified that, "Under the mining laws, which had not been changed since 1872 until last year, a miner who stakes out his claim on public lands and files on it, spends \$500 in the development of it, and proves that he has a valid discovery of minerals, is entitled to a patent. . . There is no reference to timber in the mining laws; whether there is much, little or no timber makes no difference whatever as a matter of law. . ."

In further commenting on the mining laws Secretary Davis said, "Nevertheless, a few years ago, the Department of the Interior attempted to inject into the mining laws a standard of discovery which required profitable operation and a showing that the mineral deposits had the greater comparative value than other uses. This is not the standard set by law. . . To allow mining claims to be located and then to judge them on standards other than those set up by the Congress and the Supreme Court is administrative legislation. If we are to adopt the philosophy that any Department of Government is vested with such vast powers, then it should be done by an act of Congress and not by administrative decisions. . . The wise use of our great national forests is a program supported by all

of us. However meritorious that object, I trust you will agree that we should never distort the law in order to attain it."

Secretary Davis testified that he first became acquainted with the Al Sarena claims when he was appointed solicitor in 1953. The case was then on appeal from a decision by the Bureau of Land Management which rejected the patents. BLM based its decision on assay reports submitted by E. M. Hattan, BLM mineral expert and W. C. Sanborn, Forest Service mineral expert, which stated that the claims had insufficient mineral content to warrant patents.

However, the validity of the BLM and Forest Service assays were challenged by Mr. D. Ford McCormick before the subcommittee. McCormick, a mining engineer employed by Al Sarena, testified that Hattan had visited him in 1949 to ask his opinion of Al Sarena's Rogue River claims as a large, low-grade deposit. "It was nothing new to me nor to Mr. Hattan, I believe," McCormick said, "that the property had possibilities as a large, low-grade mine. He testified in Portland that he doubted his own sampling and was surprised at the assay reports which showed a trace."

To further support his contentions that the Al Sarena claims were worthy of development, McCormick cited a U.S. Geological Survey Bulletin, 1930-31 and quoted, "there could be a large mineralized area in and around Al Sarena mines. . ."

McCormick also quoted Hattan's report to the Forest Service on Al Sarena, dated December 19, 1949: "The indications are that the central mass is all mineralized to some extent and if the prospective parallel shear and mineralized zones are good that the whole mass could be developed, mined and milled at a profit by low cost, large scale mining methods. . ."

(Turn to page 51)

Washington Lookout



By ALBERT C. HALL

BUDGET BALANCING, if done at all, will reflect no major decreases in appropriations for forestry and related activities. (For AFA's recommendations on the new budget see page 61.) As will be noted in the tabulation of the budget requests for the next fiscal year, the only items showing decreases are the amounts budgeted for pest control and for national forest acquisition. The reduction in pest control is the result of successful programs in the Northwest in the past which now make possible a lessening of the spraying activities there. It is unlikely that the 1957 figure for acquisition will remain blank, as shown, it is more likely that an amount similar to that made available in 1956 will be added by the Congress. Other items likely to be increased are those for the state and private cooperation programs of the U. S. Forest Service, especially if the proposed soil bank (see below) is established with increased subsidies for forest planting and management. For example, a supplemental request for \$450,000 for 1957 to step up research and extension services and another for \$700,000 for nurseries in connection with the soil bank are now pending before the House Appropriations Committee.

SUPPLEMENTAL REQUESTS FOR APPROPRIATIONS FOR FISCAL YEAR 1956, not included in the accompanying 1956 tabulation, but now before the Congress, include \$8,213,500 for the U. S. Forest Service—and additional \$500,000 for timber sales preparation; an additional \$5,250,000 to meet the costs of last year's critical fire season in the West; \$455,000 for forest research; \$30,000 for pest control; and the rest to meet pay increases. Also, for fiscal year 1956, is a request for the Bureau of Land Management—\$1,681,700 to cut down on backlogs of land applications and to accelerate timber sales, and \$2,000,000 for timber access road construction on O & C lands.

THE PRESIDENT'S SOIL BANK PROPOSAL has been woven into a piece of farm program legislation, (S. 3183) now before the Senate. Risking a Presidential veto, the Senate Committee on Agriculture and Forestry has combined the soil bank with a return to high-price supports. The legislation combines the soil bank with a return to high-price supports—a combination that can divert land from crop production and stimulate crop production at the same time. Ezra Taft Benson, Secretary of Agriculture, has indicated that he will recommend a veto of the presently-proposed legislation. Forestry aspects of the program are not spelled out in the bill as reported. The bill sets up the general authority for federal subsidies to persons who divert cropland to forest growth. Separate bills embody the various types of subsidies.

AN ANNUAL INCOME FOR FOREST OWNERS is proposed in several bills, (H.R. 8724, H.R. 8732 and H.R. 9088). As proposed it would not be limited to owners of lands diverted from crops, but would apply also to depleted forest lands and other lands on which the development of commercial forestry would involve the deferment of regular income for long periods. This would include the payment by the federal government of the costs of establishing the commercial forestry venture—"clearing, planting, replanting, and other operations necessary."

WASHINGTON LOOKOUT—(Continued)

FORESTRY ITEMS IN THE FEDERAL BUDGET

Fiscal Year Ending June 30, 1957

U. S. DEPARTMENT OF AGRICULTURE

| | 1956 Estimate* | 1957 Budget Estimate |
|---|----------------------------------|-------------------------|
| Forest Service | | |
| National Forest Protection & Management | | |
| Resource protection and use | \$ 35,937,750 | \$ 39,823,000 |
| Resource development | 2,145,000 ^b | 1,845,000 |
| Fighting Forest Fires | 5,250,000 | 5,250,000 |
| Control of Forest Pests | | |
| White pine blister rust control | 2,734,000 | 2,734,000 ^c |
| | 3,537,500 | 2,386,000 |
| Forest Research | | |
| Forest and range management | 4,529,816 | 4,529,816 |
| Forest protection | 1,388,222 | 1,516,222 |
| Forest products | 1,303,301 | 1,621,301 |
| Forest resources | 1,015,961 | 1,232,661 |
| Forest Roads and Trails | | |
| Construction | 17,100,000 | 17,100,000 |
| Maintenance | 6,900,000 | 6,900,000 |
| State and Private Cooperation | | |
| Fire Control | 10,025,029 | 10,025,000 |
| Tree planting | 505,000 | 505,000 |
| Forest management and processing | 690,000 | 690,000 |
| General forestry assistance | 165,000 | 165,000 |
| Cooperative Range Improvements | 700,000 | 700,000 |
| Acquisition | | |
| Weeks Act | 190,000 | |
| Special Acts | 10,000 | |
| <i>Total Annual and Definite Appropriations</i> | <i>\$ 94,126,579^d</i> | <i>\$ 97,023,000</i> |
| Indefinite Appropriations (From Receipts) | 32,020,437 | 41,527,200 |
| TOTAL FOREST SERVICE | \$126,147,016 | \$138,550,200 |
| Watershed Protection—Dept. of Agric. | 12,000,000 | 16,000,000 |
| Flood Prevention—Dept. of Agric. | 10,000,000 | 10,700,000 |

*Where applicable 1956 appropriations have been adjusted to include supplemental amounts for pay increases.
 **Includes a supplemental appropriation of \$300,000 for enforcement and work under P. L. 167, 84th Congress (amended mining laws).

^aIncludes \$335,000 available to the Department of the Interior.

^bIncludes \$2,511,400 supplemental for pay increases.

U. S. DEPARTMENT OF THE INTERIOR

Bureau of Land Management

| | | |
|--|-----------------------|----------------------|
| Management of Lands and Resources | | |
| Forestry | 2,708,800 | 4,087,800 |
| Cadastral Surveys | 1,544,800 | 1,653,900 |
| Soil and moisture conservation | 2,758,500 | 3,351,400 |
| Squaw Butte experiment station | 39,400 | 39,400 |
| Fire suppression | 210,000 | 210,000 |
| General administration | 1,051,300 | 1,212,800 |
| Other (lease and disposal of land, grazing, maintenance, weed control) | 5,968,900 | 8,222,700 |
| Access Roads (O & C) | 2,300,000 | 4,500,000 |
| Range Improvements | 525,587 | 664,750 |
| TOTAL BUREAU OF LAND MANAGEMENT | \$ 17,107,287* | \$ 23,942,750 |

Bureau of Indian Affairs (Forestry & Related Items)

| | | |
|---|-----------|------------|
| Forest and range | 2,295,830 | 2,680,000 |
| Fire suppression | 140,000 | 140,000 |
| Soil and moisture conservation | 3,832,209 | 4,084,000 |
| Road and trail construction & maintenance | 7,000,000 | 11,500,000 |

National Park Service (Forestry & Related Items)

| | | |
|--------------------------------|-----------|-----------|
| Forestry and fire control | 663,695 | 765,045 |
| Soil and moisture conservation | 101,150 | 101,150 |
| Roads and trails | 4,292,867 | 4,503,900 |

TENNESSEE VALLEY AUTHORITY (Resource Development Only)

1,110,000 1,280,000^e

^aIncludes \$581,700 proposed supplemental increase for pay purposes.

^b85 percent from appropriated funds; 65 percent from corporate (TVA) funds; includes \$475,000 for forestry in 1956 and \$520,000 in 1957.

EDITORIAL

Areas of Costly Ignorance

AFA's Board of Directors continues to move slowly and with infinite care in reference to water problems. Lack of basic knowledge in an area of costly ignorance that includes many scientific blind spots is the prime reason for this restraint. The Board has now made it abundantly clear that in the absence of factual scientific data, of the type now available in most fields of forestry, that it has no intention of compounding past mistakes in this increasingly important field nor in helping to create new ones by too precipitous action. Some members seriously doubt if AFA should become involved in the water field at all except in those areas where known and proven forestry methods can be used as a yardstick to measure progress.

The February board meeting is a case in point. A staff proposal that the time might be ripe for a water pollution resolution with teeth in it had the enthusiastic support of two distaff representatives, Board Member Katharine Jackson Lee and Honorary Vice President Marion T. Weatherford. But when it was further proposed that such action might be taken in one day's time the whole board balked. "You are asking us, in one afternoon, to propose remedial action on problems that NOBODY knows all the answers to," Dean Stanley Fontanna said. The Board readily agreed to study the problem and named a committee consisting of Dean Fontanna, Robert W. Sawyer and Charles A. Connaughton to do so. Meanwhile, the Board put up the "Go Slow" sign. Cover water and report it, the Board said in effect. But more knowledge must be the first prerequisite in this field of costly mistakes.

This being true, *American Forests* presents this month starting on page 34, a review of water progress in the nation, the recommendations of the Presidential Advisory Committee on Water Resources Policy, and a report on last month's Water Policy Conference of the Chamber of Commerce of the United States in St. Louis where this new policy was explored. As members study these proposals we think they will agree that plans to double and in some cases treble water research are progressive steps in the right direction aimed at elimination of many blind spots that now exist.

These developments indicate renewed determination on the part of the administration to go after the facts so far as water is concerned and should have the full support of the association. Frank recognition of the fact that lack of coordination of the 25 federal agencies in the water field is the "greatest single weakness" in the water picture would also appear to dovetail with AFA's policy that urges greater "coordination of planning." To correct this situation, the committee would establish advisory field committees and a water project reviewing agency in the President's office as recommended by the first Hoover Commission. This proposal has merit.

Beyond this *American Forests* is not prepared to go at this time.

Half the Melon

Judging by their comments and as a result of the Congressional inquiry on the Al Sarena Mining Case, AFA members are developing an uneasy feeling that they were actually hauled down on the 50 yard line when they thought they were going for a touchdown in the enactment of Public Law 167.

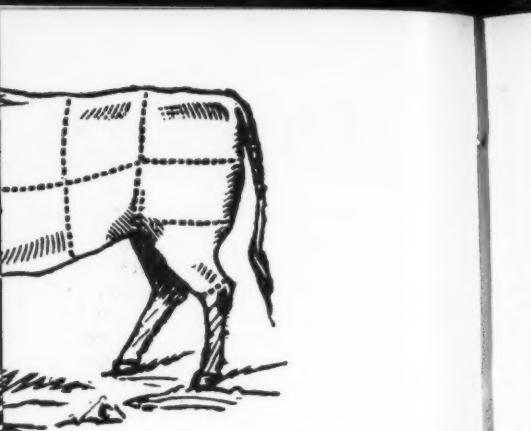
Pointing to the Al Sarena Case, members are now saying, "If your new law is any good why does it allow loopholes that enable a prospector to plunk down five dollars for a mining claim going to patent and thereby come into possession of timber that may be worth \$1,000 an acre? Is that supposed to be good?"

No, it is definitely not good. But that doesn't mean Public Law 167 isn't a good law. It is. Under its provisions, the Forest Service, for the first time, is provided with legal machinery whereby it may make harvest cuts on mining claims previously denied them. But as *American Forests* pointed out again and again at the time of its enactment, the new law does not affect in any way the PATENT system affecting mining claims. This whole thing harks back to the Hope Mining Bill of the 83rd Congress. This bill provided for two basic things. The first would have provided for those gains as regard CLAIMS that were later enacted in AFA's law. The second would have provided that prospectors at the time of going to PATENT should pay for such surface resources as the timber. The bill was effectively blocked by powerful western mining interests who later supported AFA in enactment of its bill. Thus AFA and the conservationists obtained what amounts to "half the melon" in the matter.

If it is now the will of AFA to go after the other half of this mining melon it must prepare for a ding-dong fight for the mining interests have served notice they will attempt to block any such move. Nevertheless, we believe AFA could win such a fight if it choose to do so. We base that on the wave of revolt and revulsion that sweeps from one end of the country to the other as regards any proposition not in the public interest as regards either forests or parks.

The Al Sarena matter is a case in point. We are now convinced, on the basis of the Congressional inquiry and investigations by AFA members who have interested themselves in the case, that no improprieties are involved. The committee broke its pick on Secretary Davis on this score. (See page 6.) At the same time, there is resentment over the way the Forest Service was bypassed by the Interior Solicitor in arriving at his verdict. It may be legal but they don't like it and are saying so.

That is why AFA can obtain the other half of this mining melon if it chooses to do so. Otherwise, timberlands worth \$1,000 an acre will continue to be disposed of at \$5 under the patent system. And there will be more Al Sarens.

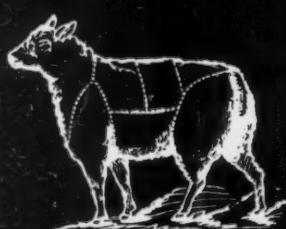


The Bureau of Land Management has attempted to apportion grazing privileges and regulate use, thereby making these lands more productive

WHEN Daniel Freeman filed on homestead No. 1 on the first day of January, 1863, he probably took it casually enough — just part of the day's work. He and recorded history somehow failed to meet. There were no flash bulbs, no deathless words, no crowding reporters, although he did have some trouble in filing on a holiday. But that simple act of converting public land into a home was the most democratic thing that ever happened in the world. A continent was thereby given away.

Pure democracy entails an equal chance for every man; the United States has come closer to achieving that than any other place since the Garden of Eden. It was appropriate that the name of the first homesteader should be Freeman. Our homestead law and the long list of hesitant Congressional steps that led up to it are probably as responsible for our democratic thinking as any other one thing.

In the last analysis, the land is the wealth. To see that clearly, one has only to think of our lands suddenly laid waste, producing nothing. We would not then have a nation of 160,000,000 people. We would be



Reductions in number of livestock may insure good ranges against probable deterioration, but will not revive sick ranges. Over-grazed range lands must be developed as any other pasture

Fifty years ago a sea of grass covered vast areas of the West—it belonged to no one and was free. But overgrazing of livestock has rendered much of this region worthless, as grass in these arid lands cannot withstand constant use. If these lands were redeveloped, the amount of meat produced there could double or triple

By E. R. JACKMAN

like Greenland—a little fringe of folks along the shore, probably not over a million, and what they called a living would be something pretty meager. Mining, fishing, and lumbering also produce wealth, but they aren't as important. Witness the small populations in nations that are oil rich or mineral rich but poor in farm wealth.

So our homestead law gave almost all of our primary wealth away and we thereby became the strongest nation on earth—a sort of practical working of Christianity. We gave away roughly one and a half million parcels of land to folks of every race and religion. It was not an Indian gift; there were few strings. A homesteader had to meet these qualifications:

- a. Be 21 years of age, or head of a family, or a war veteran.
- b. Be a citizen or one who had declared his intention.
- c. Not already own land in excess of 160 acres.

North America is the only place in the world where the greatest source of primary wealth has been given away freely and openly to all comers so that each citizen could stand on his land and hold up his head in absolute equality. The dignity of ownership is a wonderful thing.

In Russia the exact opposite is now in course of trial; all are started poor and every known device is used to keep them so. Instead of looking at his land and saying to neighbors, "I am as rich as you," the Russian collectivized peasant can look about and say, "You are as poor as I." So far that approach hasn't seemed to work so well. Here everyone produces more than he can possibly use, and we ship the surplus abroad with reckless abandon and give it away. In Russia the people have not enough of anything.

From early colonial days we worried about our land, confused. As

a nation we couldn't quite accustom ourselves to the completely new idea of land for everyone, rich or poor. For thousands of years the land-owner had been in a preferred class. The serfs bowed to him. So we stumbled through "headrights," outright sales of land, veterans' grants, the pre-emption law, the graduation law—each separate act a move to transfer federal land to individual citizens.

Public opinion finally crystallized into the homestead idea, and in 1862 President Lincoln signed the bill bestowing 160 acres upon any who wanted it. From then until about 1912 when most of the good land was gone, the American people had a 50-year period to grow into a nation.

That period stamped itself into our character so thoroughly that only now, forty years later, are we beginning to lose the traits that have set us apart. Self-reliance, fierce individualism, pride, recklessness, impatience with restraint—these things can be traced to our land laws. Why should a man take abuse, injustice, or even a bad break, when 160 acres of fertile earth was waiting for him? An overbearing parent, intolerable poverty, a tough boss—could be forgotten in the distance between Pennsylvania and Montana.

I lived in Blaine County, Montana in 1917. The homesteaders were from everywhere. A deep sea diver, a successful inventor of Coney Island roller coasters, an ex-coal-miner, a New York City bank teller who had come to regard his barred cage as literally that. And everywhere were the school teachers. I have never known why homesteading had such a hearty appeal to school teachers. They came from every state and were of every age. They had only one thing in common—a consuming, almost spiritual desire to own land.

In 1912 Alice Day Pratt, an old
(Turn to page 40)



An alfalfa field, that once supported livestock, now lies useless under flood debris



A half century of over-grazing has reduced much of the Public Domain to acres of weeds



After sheep and cattle grazed this forested area, few palatable perennials remained



THE PARMACHENE BELLE



By HENRY CLEPPER

Considered a trout fly supreme, the lure imitates in color the trout's belly-fin

PRESIDENT Eisenhower, perhaps the most widely travelled American ever to become chief executive, last June visited a section of the state of Maine that was as unfamiliar to him as it was to the newsmen, Secret Service officers, and other federal personnel who made up the Presidential party. (But not to Presidential Assistant Sherman Adams, a New Hampshire man, whose long acquaintance with New England is "extensive and peculiar.") To the nation in general, Parmachenee Lake was wholly unknown. And although many anglers had heard the name, few had ever visited this jewel of the north woods.

Parmachenee Lake, situated in a densely wooded area of northwest Maine hard by the New Hampshire line, has been an angler's paradise for nearly a century. Moreover, the lake has given its name to one of the most beautiful trout flies that the cunning mind and skillful hands of man has ever devised — the Parmachenee Belle.

During the 1870's small groups of city sportsmen, from New York and Boston, began making occasional journeys into what was then the western Maine wilderness. Not many years earlier Henry David Thoreau had penetrated and written about the north Maine woods — the Moosehead Lake Country, the headwaters of the Allegash, and the Penobscot drainage.

President Eisenhower casting for trout in riffles below Little Boy Falls, while guide Don Cameron returns each squaretail to the water

Eighty years ago, Parmachenee Lake and the upper Magalloway River that flows into it were not very accessible—from railhead a three-day journey via trail and waterway, by boat, canoe, and afoot. The area was authentic wilderness, abounding in game and fish, with dense timber, dark swamps, and numerous streams.

In 1876 there was published in Boston an illustrated guide book to the lake region of western Maine. The author, Charles A. J. Farrar, wrote of Parmachenee as "one of the most beautiful sheets of water I have ever seen. It fills a natural basin, walled about by high, wooded hills, some of which are mountains of note."

He warned that, "The trip is one that cannot be made in a hurry, and three weeks at least should be devoted to it, as ten days of the time will be spent in coming and going.

"A party composed of four persons and a guide, which is as large as any party should be, can make the trip from Boston to Parmachenee and return, being absent from the city three weeks at an expense of \$50 each. This would be sufficient to cover the guide's services, \$2.50 per day."

Those were indeed the good old days!

"The altitude of Parmachenee Lake is not far from 2,500 feet, the air is clear and bracing, and will give a dyspeptic individual an appetite that will astonish him," Mr. Farrar asserted. "Life in a tent for three weeks on the romantic shores of Parmachenee will do more good for him than all the doctors in Boston could do in three weeks."

By 1887 when a paperbound book called *Sportsmen's Paradise* by Geo. H. Haynes was published, he reported that a group of cabins, called Camp Caribou, had been erected on Treat's Island in Parmachenee Lake for the use of hunters and fishermen. Although Camp Caribou was 18 miles from the nearest habitation, it could now be reached "by easy conveyance in forty hours from New York."

The proprietor of this camp was John S. Danforth. When in 1890 a group of sportsmen organized the Parmachenee Club, he became its manager. The club leased some 120,000 acres of woodland, extending from the Canadian boundary south to the community of Wilson's Mills. Deer, moose, bear, waterfowl, partridge, and brook trout were abundant.

In the fall of 1890, Mr. Danforth employed one Daniel E. Heywood as trapper, hunter, and guide, and instructed him to keep a daily diary which he did during the fall and winter. Heywood's brief diary, published in 1891, gives a truly fascinating account of day to day life as it was lived in the remote north woods during the severity of winter.

Two decades later, in 1910, the Berlin Mills Company and the International Paper Company, which owned most of the land leased by the club, built a dam at Aziscoos Falls to move pulpwood into the Androscoggin River. Although the level of Aziscoos Lake fluctuates because of the need to provide a sufficient flow of water in the Androscoggin for the movement of pulpwood, the level of Parmachenee remains relatively constant.

Angling in the lake is still excellent, but the trout are generally not as large. Threescore years ago a five-pound brook trout—or squaretail, as the species is known in this country—was common, as many verified club records attest. Today such a specimen would be a rarity.

An early member of the Parmachenee Club, and its sometime president, was a New York lawyer named Henry P. Wells, who will be forever immortalized in the memory of anglers as the inventor of the Parmachenee Belle. During the 1880's, Mr. Wells wrote two books and numerous articles on angling. One of his best-known works, *Fly-Rods and Fly-Tackle* published in 1885, is now a collector's item. While on a fishing trip in his beloved Parmachenee Lake, he devised the Belle pattern, probably about 1877 or 1878.

Actually, the Belle does not resemble any natural insect. He and his fishing companions had observed that brook trout in those waters would strike something red, and the fly was tied to imitate the trout's pectoral fin.

But let Mr. Wells himself describe it. "The body is lemon-yellow mohair, wrapped with silver tinsel; tail two to four strands of white and scarlet; hackle white and scarlet . . . wings white, striped with scarlet, the white decidedly predominating.

"Unless I am deceived, these large trout take the fly not as an insect, but as some form of live bait. If this is true, an imitation of some favorite form of food is in itself sufficient under all circumstances, provided it is so conspicuous as readily to be seen. To test this theory the fly in

question was made, imitating in color the belly-fin of the trout itself."

Although recognizing the wide divergence of opinion in the matter of trout flies, Mr. Wells did not permit his sense of modesty to influence his partiality for his own child. "Place the whole catalogue of known flies on the one hand, and this single fly on the other, and force me to choose and confine myself to that choice, and for fishing in these waters I would choose the Parmachenee Belle. I have tried it in sunshine and rain, at noonday and in the gloaming, and at all times it has proved successful."

In the 1901 edition of his book,



Author Henry Clepper displays two Parmachenee Lake landlocked salmon

Mr. Wells writes, "Twenty years' further trial, not only on the waters of the wilderness, but also on the much-fished ponds and wading streams of civilization, where small flies and fine tackle are habitually used, have but confirmed my predilection for this fly. If I am correctly informed, it has carried the dear name of Parmachenee even to distant New Zealand, and is there a favorite . . . "

Today the Belle is esteemed throughout the United States and Canada. It is tied as a steelhead fly, a panfish fly, a streamer fly, and as a trout fly in such variants as closed wing, down wing, and upright wing, and is fished both dry and wet. Indeed, in its various patterns it is one of America's most popular fly lures.

(Turn to page 56)



In wilderness areas of Colorado, Idaho, Montana, and Wyoming, and in Yellowstone and Glacier National Parks, individual grizzlies roam over territories that are about twenty miles in diameter and use well-defined routes that lead to above timberline. Outside the United States there are large areas that may still be designated grizzly bear territory. In Alaska, the Yukon, and British Columbia grizzlies in considerable numbers wander over individual territories in the rugged mountains and across vast expanses of tundra.

Alaska is reported to have more than 10,000 grizzly bears, and though figures are available, western Canada is supposed to have a good-sized population of this bear, whose fur may have a dark-brown cast, the usual color, or a hue that is yellowish, grayish, or blackish. Light-tipped hairs on the upper-parts of the body give the animal the grizzled appearance from which it gets its common name.

A grizzly does not reach full size until the animal is eight to ten years old, about one half of its life span in

Our Vanishing Species

By WILL BARKER

AS competition for the land continues unabated, several species of native wildlife are finding survival increasingly difficult. Currently there are about fifteen of these endangered species as the National Wildlife Federation designates those members of the Wildlife community whose existence is in jeopardy.

Among the birds and mammals on the Federation's 1956 list is the grizzly bear, first described scientifically by Lewis and Clark after their return from exploring the headwaters of the Missouri and Columbia Rivers in 1805-06. Only a few hundred of these great, hump-backed bears with dished-in faces and grizzled coats are left in the United States.

the wild. A mature male weighs anywhere from 500 to 800 pounds—occasionally as much as 1,000 pounds—measures six to seven and one-half feet in length, and stands three to three and one-half feet at the shoulders. A full-grown female weighs about 400 pounds, with the other physical proportions scaled to this smaller weight.

To preserve the grizzly bear in Alaska, the Territorial Game Commission has reduced the limit from two to one grizzly or brown bear except in southeastern Alaska. Such a measure should maintain a sufficient breeding stock of these bears in Alaska so that the species will be perpetuated—provided, of course, that wilderness habitat is always available, the great problem for sav-

Grizzlies, whoopers and graylings are among several species of wildlife whose existence is threatened. But like the once endangered buffalo, some species may be able to survive



ing Stateside grizzlies from extinction even if all hunting is prohibited.

In November 1955, the world's only flock of whooping cranes, one of the birds on the Federation's list, returned to their wintering grounds with eight young. These eight juveniles constitute the largest increase in the flock since the Aransas National Wildlife Refuge on the Gulf of Texas. At Aransas the whooping crane is given special attention.

The first official count of the whooping crane, a great white bird with a red-crowned head and black-tipped wings, was made in 1938-39. There were only 18 birds then and in 1941-42 there were only 15 whoopers—representatives of an indigenous North American bird that was apparently never numerous. In the early 1800's the range of the whooping crane was from the Arctic Coast to central Mexico and from Utah to South Carolina. Each whooping-crane family needed a considerable area for its wintering ground and for its nesting and breed-

to all of us—hunters, amateur and professional ornithologists, and conservationists—to cooperate in protecting the whooping crane so that this representative of our once truly abundant wildlife can survive.

An indigenous fish whose numbers are so few that its continued existence is open to question is the Montana grayling—a fish that is purplish blue on the back and a lighter purple on the sides and lower margins. The large dorsal fin is a dusky green flecked with rose and orange. The Eskimos call the grayling "hewluk-powak," meaning fish with a wing-like fin and the last two words of its scientific name, *Thymallus signifer tricolor* are apt. Signifer, meaning standard bearer, and tricolor, three colors, truly describe the enormous dorsal fin, which readily distinguishes the grayling from the trout.

Originally there were two species of grayling in the United States—the Michigan and the Montana. The Michigan grayling was considered extinct by 1931, but the Montana

when grayling were comparatively abundant. Here the grayling maintains itself naturally.

Since irrigation on Red Rock Lakes—a national wildlife refuge—has been curtailed or not permitted until after July 1, there has been a marked increase in young grayling and in 1955 adult spawners were seen in three creeks where none had been seen for many years. However, despite this increase—an increase of sufficient numbers to permit limited fishing—management must be continued and have the support of all those interested in the preservation of a native species, a species most numerous in an area which has been the means whereby a once-endangered species has been saved from extinction.

In 1935, the 40,000-acre Red Rock Lakes Migratory Waterfowl Refuge was established in southwestern Montana to preserve and protect the trumpeter swan, largest of the North American waterfowl. In 1935 there were only 73 swans by actual count; today there are more



Nesting and breeding grounds for whooping-crane families have been reduced by agricultural expansion and the drainage of wetlands and coastal marshes

ing ground in summer. Settlement of the country, expansion of agriculture, and related activities including drainage of wetlands and coastal marshes, reduced the range of the whoopers, and many of the birds were either deliberately shot or mistakenly shot on their southern migration—a flight of nearly a thousand miles.

To survive the greatest need of the whooping crane is protection from hunters during the fall migration and privacy on their wintering grounds. Establishment of the Aransas refuge has assured these birds the necessary privacy, but little can be done by officials charged with enforcing federal and state regulations during the cranes' fall migration when they fly through provinces and states whose waterfowl hunting seasons open early. Therefore it is up

grayling has managed to survive in a small part of its former range—all of the Missouri River drainage above Great Falls. Although pollution and siltation played a large part in the decline of the Montana grayling, the introduction of exotic fishes is believed to be one of the major causes for the greatly reduced numbers of grayling.

To survive, the grayling needs clear, cold, and unpolluted streams with sand or gravel bottoms. In the fish's original range there are only a few such spots; these areas are in the upper tributaries of the Big Hole and Beaverhead Rivers. In the tributaries of the Big Hole River artificial propagation is the means by which the grayling is maintained, but the upper drainage of the Beaverhead in the Red Rock Lakes area is much as it was in the days



Many grizzlies once roamed the Northwest, but only a few hundred are left

than 600 of these great white birds, that stand about three feet and have a wingspread of more than seven feet. These birds, closely related to the more numerous whistling swan, have been saved from extinction by the timely action of all those interested in saving a part of America's wildlife legacy. The increase of the trumpeter swan is conservation-in-action at its best, and is an example of what can be done to save an endangered species, whose habitat had been greatly reduced by civilization's encroachment—to be regretted but nonetheless inevitable due to our constantly growing population.

In a U-shaped region about one hundred miles long in the mountains and foothills surrounding the southern San Joaquin Valley of California, about 60 of our largest soaring land birds survive. These

survivors of another native American species are the California condors, birds with black plumage and a naked head that is bright orange. A condor weighs about twenty pounds and has a wingspread of nine feet. To survive the condor needs above all else protection from disturbance by man and a federal law specifically naming the bird as one which cannot be shot.

In the Southeast on the Florida Keys, from Big Pine Key to Key West, the little key deer, a pint-sized edition of the Virginia whitetail, has increased in the face of tremendous odds until there are about 130. All this little deer needs to maintain itself is a reasonable amount of habitat and protection. The establishment of a protective area for the key deer, now known as the Key



Protection of wildlife refuges has helped to save the wild turkeys from extinction

Deer National Wildlife Refuge in 1935 should do much to give the little animal the necessary protection. In fact it is thought that this area—home of American crocodiles, alligators, and raccoons—will support three hundred key deer provided a year-round supply of fresh-water can be better distributed throughout the refuge.

Another unique American species, the everglade kite, exists in numbers about twice those of the whooping crane. In all there are possibly sixty everglade kites, a mouse-gray bird in the case of the male, dark brown for the female. The kite, known only to Florida, has a long, slender, and strongly hooked bill, and eats only one species of fresh-water snail.

As marshes were drained the food of the kite disappeared and with its going the kite went too, and numbers of kites were shot due to ignorance or thoughtlessness. At present the Florida Audubon Society, the Florida Game and Fish Commission, and Federal authorities have posted certain marsh areas where the kite still probes for snails and are publicizing the need to give this unusual bird a chance to survive.

Once our largest woodpecker, the ivory-billed woodpecker, was found in the large river swamps from southeastern North Carolina to eastern Texas, in the Mississippi bottomlands north to the mouth of the Ohio, and in the great cypress swamps of Florida. The only recent reports that this once-numerous bird still exists have come from northern

Florida. If these reports can be verified, then the remaining ivory-billed woodpeckers, if any, must be given rigid protection on a forest area which has to be managed so that there is an abundant food supply.

Although not in danger of extinction except in the Great Lakes, the lake trout is on the list of species which needs some form of aid for their preservation in the Great Lakes. Since 1939 the commercial and sport fisheries in the Great Lakes have constantly decreased until 22 pounds of lake trout were caught in Lake Michigan in 1954.

The cause of this decline in the catch of lake trout is the sea lamprey—an eel-like predator, which subsists entirely on the blood and body juices of fishes.

The remaining species on the list are the Great Lakes sturgeon, now so few in numbers that in some lakes it may be impossible to save it; Attwater's prairie chicken, at present known to exist only in parts of eleven Texas counties; the once-abundant Eskimo curlew; the desert bighorn sheep; and the rare black-footed ferret.

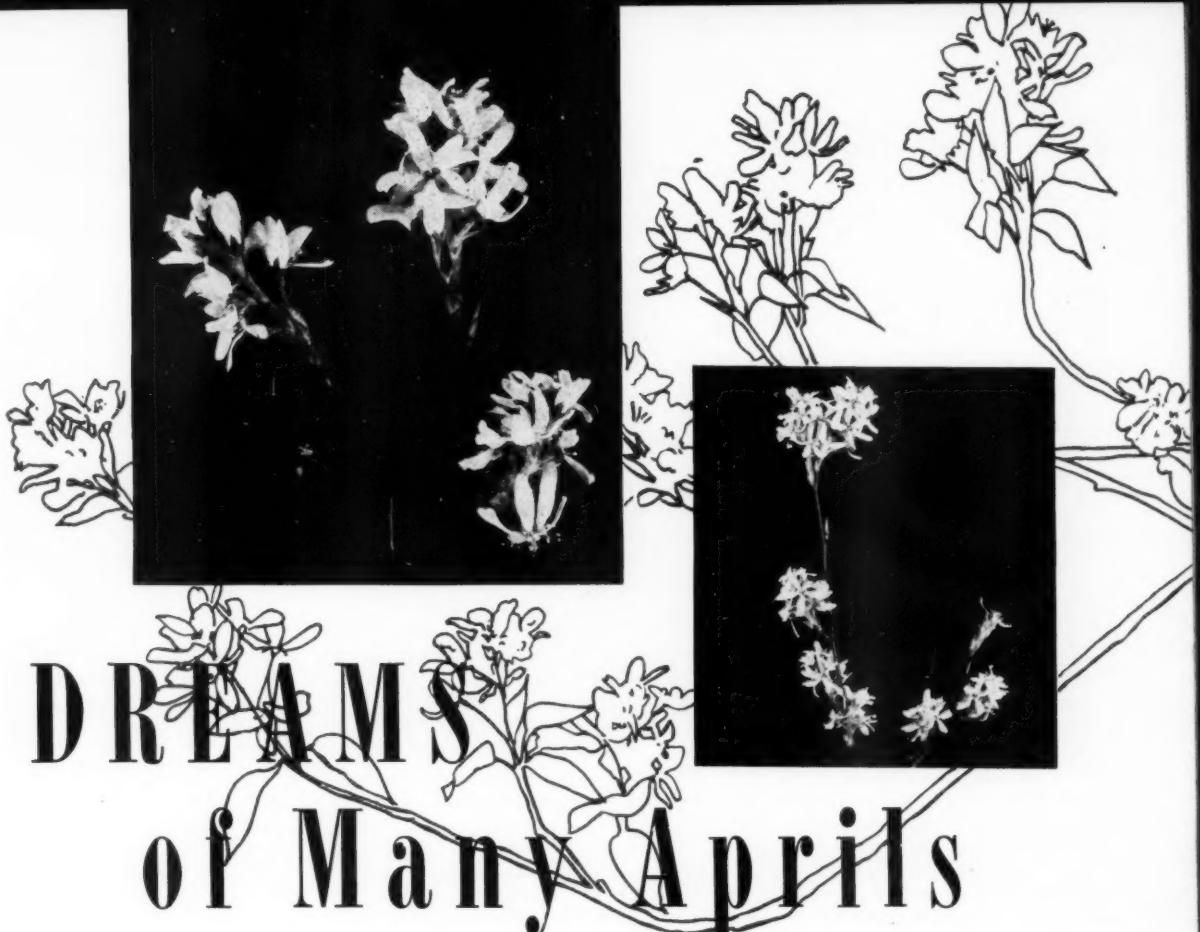
No one knows with any certainty which of these species can be saved or which will become members of the wildlife America that was. But if these species have not passed over the threshold, that is become too few, where it is impossible to restore them, there may be a conservation miracle similar to the one which saved the rare sea otter from extinction.

In 1911 there was only a remnant of the once-abundant sea otter herd left in the Aleutian Islands area. Today there is a herd of several thousand in the waters around these foggy, treeless, and windswept islands, and a small herd of about three hundred off the California coast near Carmel. Rigid protection is responsible for the increase of the sea otter—a mammal with a rich dark brown or black coat and a white-whiskered face that makes the animal look like a quizzical old man—the reason for the nickname "old man of the sea."

It may not be possible to save all these endangered species or even build them back to such numbers as the trumpeter swan or the sea otter, but let us hope that the majority of them can be saved—living representatives like the once-endangered buffalo of the wildlife America that Audubon, Douglas, and Muir knew and loved.



As a result of rigid protection herds of sea otters now live in Aleutian Islands region, but previously, survival of this species had been doubtful



DREAMS of Many Aprils

By JESSE STUART

A CROSS the creek, above the gray-lichened strata of cliff-stone, the whitebeam tree or the shadbush tree is now in bloom. My father always called this tree the whitebeam, and I have heard several older men speak of it as the whitebeam and didn't know it by the name of shadbush. Last night it bloomed into a white cloud. About in a night's time, its white blossoms will disappear.

In springs before, the whitebeam has usually blossomed in March. Very often it has blossomed in early March. It seldom waits until April. This year the cold days of icy rain, snow, and freeze retarded its growth. Since I was eight years of age I have seen this whitebeam in blossom each spring. Standing above the cliffs, on this rugged hill where the soil is very sterile and where its depth is only a few feet to the solid rock, this tree has never grown excessively. I can't tell that it has grown any in the last twenty years. Maybe, slow-growth and never large is its nature, like the sumac, sassafras, persimmon, and sourwood.

My father used to gather the red

berries from the whitebeam when we first moved here in 1915. He was young and active and could climb the tree and pick the berries. Mom always made us pies out of the whitebeam berries. I can't say they were as good as apple, huckleberry or peach pies but they were good and fresh in the early spring. Since this tree is the first of all trees to bloom, its fruit grows and ripens early too.

Now to see this tree white as a cloud with barren trees all around it, brings back the dreams of many Aprils. I think of the lift it has given us in the late winter and cold barren spring. To see its white blossoms made us want to plow and plant our garden. We knew spring was not far away. We knew that this tree was a pioneer of the blossoming trees of spring, and the color of the gray-lichen on the cliffs. I often wondered if this was not the reason it was called the whitebeam tree.

As a small boy I used to walk to this tree, stand under it and watch the white petals fall to the ground when the March winds blew strong. I've stood under it and looked up

through its blossoms at the stars on cool March evenings. I've seen the white petals fall down over the cliff into the clean, blue, swift water and float away. And I wondered why the petals couldn't remain just a little longer. I thought the season for this tree, like the season for peroon and trailing arbutus and other real early wild flowers in spring was all too short.

For the whitebeam blossoms were gone long before the dogwoods and redbuds, the wild plum and wild crabapples started blooming. And wherever I've seen the whitebeam in this county, it grew on the most inaccessible land, bluffs, rough terrain and often amid rock cliffs. And like many of the wild flowers, such as the wild rose, I wondered if rich loamy soil would hurt the tree. I wondered if it had to have poor, rugged soil, like the wild rose, to live and grow in. And like the wild rose blooms, the whitebeams are beautiful. Poor soil flowers, shrubs, and trees that grow in the poorest soil have the prettiest blossoms.

Today I walked over to the edge
(Turn to page 55)

Representatives from all parts of the South will meet in New Orleans to map strategy to combat the arson and wildlife menace, which costs the South more than a quarter billion dollars yearly in woods losses

Southern Fire Conference

ACCOLADES from all over the country began to pour in at the offices of The American Forestry Association last month as the courageous campaign of the southern people to stamp out the menace of wildfires in southern forests began to attract national attention.

Endorsed by the Conference of Southern Governors, the first south-wide conference on this problem that costs the South woods losses of more than a quarter billion dollars a year will be held at New Orleans, April 13 and 14. Purpose of the conference is to inform the public of the extreme seriousness of willfully set fires, to arouse articulate, aggressive public opinion against such practices and to stimulate immediate action at state, county and community levels to eradicate the wildfire menace in the shortest possible time.

In Washington last month, Lowell Besley, executive director-forester of AFA and chairman of the conference, hailed the program as an all-out effort to implement the Number 1 Plank in AFA's Program for American Forestry. This is "to meet the essentials of forest protection in the United States."

Comments from the South were equally enthusiastic. These included:

Waldo E. Tiller, president, Tiller Tie and Lumber Company, Little Rock, Arkansas and state chairman — "This conference is the biggest forestry idea yet conceived in the South. Its potential is such that it might be able to push forestry ahead by 15 years in every southern state."

John W. Squires, president, Mississippi Forestry Association and conference chairman for Mississippi — "We fully expect this conference to result in accelerated progress in all phases of state forestry programs — and not just in fire prevention alone."

W. R. Hine, I and E Chief, Southern Regional Office of the For-

est Service — "Never before in history have all forestry organizations and the entire wood using industry been so completely together on any forestry project. It is inspiring to know that from Maryland to Texas and Oklahoma, a well directed and powerful attack is being made on the wild fire menace."

State Forester A. D. Folweiler, of Texas — "When all public and private sources marshall their strength as they are now doing, the impact against wildfires will be a telling one."

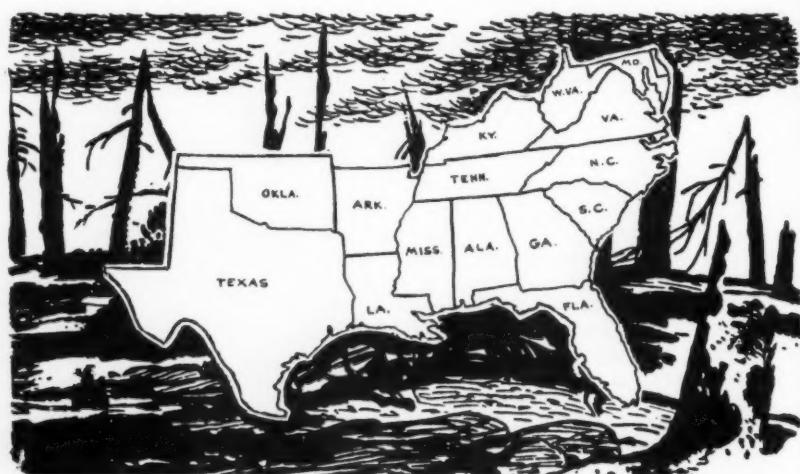
State Forester James E. Mixon, of Louisiana — "It is our hope and belief that this conference will direct the eyes of the public towards wild forest fires more forcibly than ever before. We fully expect that the courts will be more stern in handling arson cases when the public becomes aware of the enormity of this crime in our southern forests."

"The program is rolling along in a most encouraging fashion," Frank Heyward, of the Gaylord Container Corporation, reported last month as he continued to travel from state to

state in organizing state programs. "At first, some states were a little casual and luke warm toward the idea. But when they were informed as regards the careful thought and planning that have gone into the conference, they became impressed and then became downright enthusiastic. Some state delegations are now talking in terms of chartering pullman cars for the New Orleans junket."

Mr. Heyward, a widely-known southern forestry leader, reported that "things began to move as state committees were set up. As of the second week in February, committees in Arkansas, Texas, Mississippi and Louisiana were on the move. As this article was written, Mr. Heyward was en route to Georgia and expected to head into Florida and Alabama by the middle of the month.

To give the conference organization another boost, Mr. Besley flew to Atlanta the first of February where he participated in a press conference on the proposed program that was handled by Maynard Stitt,



Statistics reveal that 89 out of every 100 acres lost to forest fires are in the South, and that 94 out of every 100 fires deliberately set are in the South



Harry Mosebrook, of the Chamber of Commerce of U. S., will direct state fire seminars



Frank Heyward, of Gaylord Container Corporation, is publicity director for conference



Lowell Besley, executive director-forester of AFA, is chairman of the fire conference

of the Justin R. Weddell Associates, which organization has been engaged to handle promotion and publicity. An attractive brochure on the southern conference was released in conjunction with this conference and a steady stream of publicity releases and radio and television programs have now been scheduled leading right up to the conference. At the same time the Advertising Council of America is giving the conference full support on a national basis and its representatives will take an active part in the conference itself.

Meanwhile, Heyward, Weddell and Stitt reported that the Forest Service threw the full weight of its southern region into the program at a publicity meeting in Atlanta February 6 attended by Information and Education officers of the Service in the southern region, and also by representatives from Washington headquarters. Farm and conservation publications in the states will be the principal targets for this active group while publications of regional and national circulation will be the responsibility of Weddell Associates and the Advertising Council. It was agreed that Bob Harrell will act as publicity chairman for Tennessee and detailed arrangements are now being worked out for Delaware, Kentucky, Maryland, Oklahoma and Virginia.

William Huber, director of the Smokey Bear campaign from Washington, said two four-and-a-half minute television films will be made

available to which a "trailer" on the conference will be spliced and distributed through state publicity chairmen.

Plans on the conference itself are developing rapidly and the complete program will be announced in an early issue. The first day will be devoted to outlining the problem as it affects fire control and possible cures. The second day's program is being headed up by Harry Mosebrook, of the Chamber of Commerce of the United States, and will consist of individual state fire seminars to discuss and outline proposed courses of action in the various southern states.

Radio interviews, a slide-illustrated TV script, a fact sheet, mats, radio spots and other materials will be supplied to all publicity state chairmen by Weddell Associates. A plan to sponsor a contest among southern editorial cartoonists was proposed and approved by publicity representatives.

Those who attended this initial publicity organizational meeting were: Mr. George M. Kyle, Alabama Department of Conservation, 711 High Street, Montgomery, Alabama; Mr. F. H. Martin, Arkansas Forestry Commission, P. O. Box 1940, Little Rock, Arkansas; Mr. R. E. Davis, Georgia Forestry Commission, 11 Hunter Street, S. W., Atlanta, Georgia; Mr. Edwin Moore, Florida Forest Service, Tallahassee, Florida; Mr. Ed Kerr, Louisiana Forestry Commission, P. O. Box 1269, Baton Rouge, La.; Mr. Louis A. Rowland,

Jr., Mississippi Forestry Commission, P. O. Box 649, Jackson, Mississippi; Mr. Wade Lucas, Department of Conservation and Development; Raleigh, N. C.; Mr. Walter T. Ahearn, Box 357, Columbia, S. C.; Mr. Bob Harrell, Southern Pulpwood Conservation Association, 1224 Peachtree Street, N. E., Atlanta, Georgia (for Tennessee); Mr. E. R. Wagoner, Texas Forestry Association, P. O. Box 1032, Lufkin, Texas; Mr. Harold Lambert, Conservation Commission, Charleston, W. Va.; Mr. Frank J. Heyward, Gaylord Container Corp., Bogalusa, La. (Chairman, Conference Publicity Committee); Mr. Charlie Crail, Division of Forestry, Frankfort, Kentucky; Mr. Hilton Watson, Alabama Forest Products Assn., Montgomery, Alabama; Mr. Virgil Cothorn, Southern Pine Association, New Orleans, La.; U. S. Forest Service, Atlanta, Georgia; Mr. C. Otto Lindh, Mr. Frank Albert, Mr. W. R. Hine, Mr. Sam Beichler, Mr. K. W. McNasser, Mr. Harry Rossoll, Mr. Arthur Hartman, Mr. E. A. Heers, Mr. Bill Huber, Washington, D. C.; Maynard Stitt, Weddell Associates, Brent Annex, Pensacola, Florida.

The conference brochure released last month reported: "The South is striking a new blow at forest wild-fires which menace its prosperity. Dismayed by an economic loss estimated at a quarter of a billion dollars annually, Southern governors have instructed a Southwide meeting — the first of its kind ever held

(Turn to page 57)



These riggin' slingers from Camp 44 really have to wallow in the snow to hook onto these trees

HOT LOGGING

OPERATION now going on near Camp 44 of Potlatch Forests, Inc., in the snow-filled mountains at Avery, Idaho, is called a "hot logging" one in spite of an all-winter snowfall of 175 inches of snow in places!

Lumberjacks there are handling icy trees in a hurry—as if they were hot. The men fell and immediately drag behind a tractor, or "skid," whole trees to landings, where they

are sawed into long logs. At landings, or concentration points for logs out in the forest, men also trim off limbs that are not knocked off along the skid trail.

Sometimes a bulldozer at a hot-logging landing just nuzzles its blade against a skidded tree, rumbles ahead and shears off branches like ten pins set at an angle.

Without delay, logs start traveling by oversize trucks and railroad flat cars to PFI's (as the large Potlatch Company is known in the Idaho panhandle) log storage ponds. This is being done with a maximum number of time-saving shortcuts. Often hot-logging logs are converted into lumber within five days of arrival at a pond.

Less than a week from stump to finished product—in the middle of a blustery northern Idaho winter!

Under leisurely logging conditions in Idaho, trees are sawed into logs at the stumps. Then logs are transported to ponds in periods ranging up to months in length.

Low temperatures and snow may hamper work in winter. "Choker" cables to loop around felled trees, which a "riggin' slinger" rassles in place in one of the few hand jobs

left in modern logging, becomes burning cold to handle. "Hookers" and "top loaders," who tend to log transfer onto the giant trucks, also have to toss their larger and colder yet tongs around by hand. The jobs can be tough ones in spite of wool-lined, synthetic-leather mittens which are impossible to keep dry.

The feverish activity for a snowy season is because of a two-and-a-third billion board foot epidemic of spruce bark beetles in the northern Rocky Mountains. Chemical sprays have no effect on the bugs, which spend most of their lives as larvae under the bark of spruces they are killing. Best control is by sanitation-salvage logging. Trees already killed by the beetles are thus saved from deterioration which sets in two or three years after death. Therefore, removal of trees at top speed is a must.

Tree removal, with beetle larvae beneath the bark, will also decrease the number of insects that hatch and fly away to infest fresh trees each May and June. Logs of harvested trees are dumped into the water and thousands of larvae in each one thereby drowned.

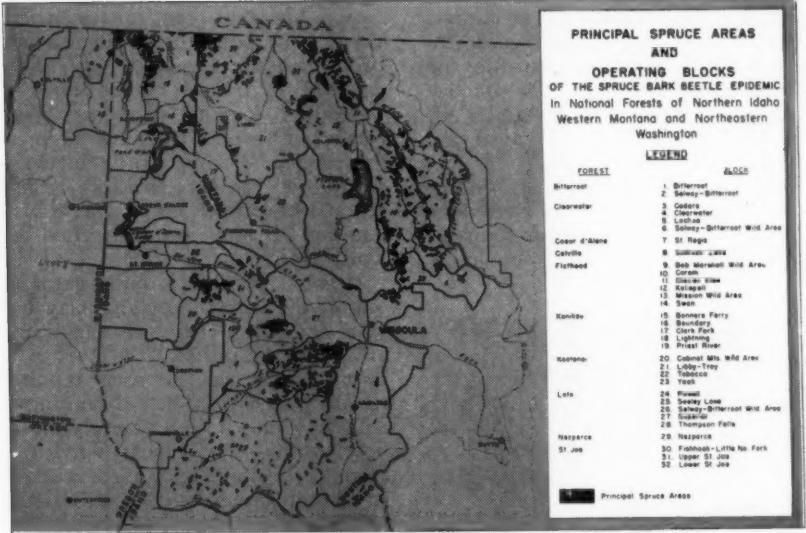
The fact that beetle larvae can be drowned most easily during the



Truck hauling load of 10-11,000 board feet of logs from endangered forest to railroad



Larvae feeding on the inner bark



Bark beetle has attacked two and one-third billion board feet in region

Necessity produced the unconventional logging methods in the snow-covered mountains of Idaho, where an invasion of spruce bark beetles threatens the forests, and the most effective counter-attack is tree removal at top speed

By BOB FORBES

colder part of the year has PFI loggers especially busy from October through June—even where drifts the size of a house are common.

Forest Service insect scientists are experimenting with a novel "trap tree" method of catching the six-legged spruce assassins. Living trees are cut down or, by a faster route, merely pushed over by road-building bulldozers and left on the forest floor.

Then the rumor spreads by grape-vine in local beetle circles that in the down trees are good places for insects seeking shelter and rations. Healthy, standing trees usually succeed in drowning out beetle invaders in a plentiful flow of pitch, but felled trees cannot resort to this defense. And the beetles know it.

The snowfall is 175 inches in some places near Avery, Idaho, and Camp 44 looks like this almost every February, when the winter's accumulation reaches maximum depth. Picture was taken from the top of a car in parking area of the camp.

Trap trees, after they have accumulated tens of thousands of bugs in bark burrows, are hauled away and placed in water; or inaccessible trees are treated with chemicals on the spot. "A trap absorbs up to four times as many beetles as a healthy tree," states Phil Johnson, service bug expert of Missoula, Montana.

Most important hot-logging shortcut at Camp 44 is the universal use of power chain saws. The saws enter in everywhere until logs are on trucks. Boss woodsmen even say that it is difficult to get mechanized lumberjacks to swing axes when their use is called for.

In felling a tree in winter by this means, it is often necessary to tunnel down beside it in the packed snow to leave a low stump. "By golly,"

claims Walt Lundstrom, a sawyer at Camp 44, "we had to dig a pit 12-feet deep in the snow beside one tree in February. The job took a half hour for less than 10 minutes of sawing time."

Also, lumberjacks often have to operate on snowshoes. The webs are especially helpful in December and January, before snow on the ground has become well packed. An unencumbered man can usually walk on top of the snow at any time. The added weight of his motorized saw makes the webs necessary.

Haste of the spruce harvest does not allow construction of elaborate skid trails along which "cats," as the loggers call all tractors, haul their log loads. "Snow roads" compacted several feet above the ground are used instead.

During the spring break-up, a covering of earth is applied to snow roads to retard melting, the soil insulates so well. Some roads of this type remain in place much longer than the snow on landings, so tractors often work above the heads of landing men. Sometimes a bridge of logs is called for, corduroyed between levels of landing and snow thoroughfare.

Wintertime logging has been practiced by PFI and other large northern Rocky Mountain companies for some time. Years ago the practice was followed with teams and sleds on iced roads for economical log transportation.

Part of the time during recent years, companies logged in winter to satisfy the tremendous demand of modern warfare for wood in its

trees' branches are heavy with needles, unless beetle destruction has progressed too far, and hold back cat loads by friction on the snow.

Modern logging in winter has other hardships. Often cat engines must be run 24 hours a day, it gets so cold. Overnight snowstorms may cover all tractors, trucks and other equipment with several inches of white crystals.

It is not possible to build garages out in the forest. Logging may be in a different sector a year or even a week in the future. "Cat doctors," or mechanics, get for their repairs the only sheds installed at landings.

Falling snow or rain merely cools hot logging—slows some activities. Wind is the only break in the weather that altogether halts work. "Safety of men is our reason for shutting down on gusty days," says Earl Ritzheimer, logging superintendent of the PFI Bovill operation in which Camp 44 is located. "The physical job of logging here is never impossible."

Broken limbs in the crowns of trees may be dislodged by wind and crash to earth without warning. Dead trees in the forest may be blown over. These dangers on windy days for years have been known to lumberjacks as "widow makers." And they have made the greatest

change of all time in woods apparel.

Hard hats, introduced into American industry by shipyard workers during World War II, have now become standard headgear in the tall timber. "Montana peak" hats, black hats of soft felt, caps and hunters' red hats have all passed into the limbo on well-dressed loggers' heads, because of widow makers.

Work at top speed requires abundant energy of all hands. The 130 to 150 men at Camp 44 get it at the camp cookhouse, too. Each of them eats 7.4 pounds of food per day—enough to choke the proverbial horse. Monthly meat consumption at camp averages two and three-quarter tons!

Despite hardships and huge meals, the lumberjacks of Camp 44 are harvesting a record number of trees in the snow and ice. "We've been getting out of the Camp 44 area an average of two hundred thousand board feet of timber per day, almost each day since we shifted to bug infested spruce in December, 1952," claims bull-of-the-woods Ritzheimer.

The combination of beetles and unconventional logging has allowed Camp 44 men to work in the mountains for eight months per year in snow—a feat not equalled anywhere else in the world, not even in Alaska.



Universal use of power chain saws is most important hot-logging shortcut at Camp 44

many forms. Some of the time manufacturers found the price of wood products "right" for year 'round logging. Each year, to a greater extent, large forest industries have realized their importance to communities. They have remained active throughout the year to give personnel steady employment.

One trouble with handling logs in winter is eliminated by hot logging. The difficulty: logs limbed and cut to length at stumps were apt to act "alive," as described by retired PFI woods foreman Axel Anderson, and try to run down steep pitches over packed snow faster than the cat that was supposed to be skidding them. And that trouble added problems to those of skidding.

Imagine how disconcerting it would be to look down from a cat and see logs sliding downhill and "straining at the leash" all around the machine, instead of well behind it! "Live" logs often blocked cat turns to left or right.

The elimination: hot-logging



Riggin' slingers ready to hook onto tree which will be whisked behind a cat to a landing, shipped by truck to railroad, and from there to a PFI log pond

The National Park Service's comprehensive new program, designed to improve park facilities, is ready to swing into action as soon as Congress approves the funds

MISSION 66 GETS UNDERWAY

PRESIDENT Eisenhower last month asked Congress to appropriate \$8.35 million to finance the first year's expenditures of the National Park Service's 10-year development program known as Mission 66. The total cost of this extensive project is estimated to be about \$124 million, and carries the full endorsement of Interior Secretary McKay.

Mission 66, a comprehensive program designed by the Park Service, is aimed at improving park facilities which are inadequate to meet the increasing demands being made upon them. The number of visitors to areas within the national park system has increased from 21 million in 1946 to 50 million in 1955; and the number expected to reach 80 million by 1966. With park facilities already seriously overtaxed, the Park Service believes it is essential that Mission 66 begin immediately in order to preserve the parks themselves and to serve the needs of the American people.

Eight basic elements comprise the foundation for the operation of Mission 66:

1. Provide additional accommodations and related services of types adapted to modern recreation needs, through greater participation of private enterprise within and near the parks.

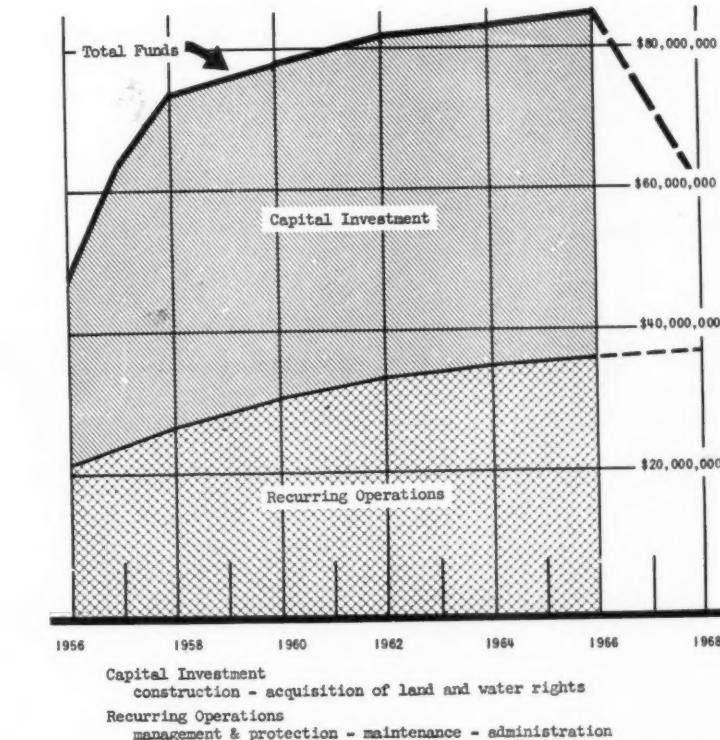
2. Provide the government-operated facilities needed to serve the public, to protect the park resources, and to maintain the physical plant.

3. Provide the services which will make the parks more usable, more enjoyable, and more meaningful, and thereby improve the protection of the parks through visitor cooperation.

4. Provide operating funds and field staff required to manage the areas, protect the resources, and provide a high standard of maintenance for all developments.

5. Provide adequate living quarters for the field employees of the Service.

6. Acquire lands within the parks and such other lands as are neces-



Based upon current prices for supplies and services, the Park Service estimates the total cost of Mission 66 for 10-year period will be \$124,165,600

sary for protection or use, acquire the water rights needed to insure adequate water supplies, and extinguish grazing rights and other competing uses.

7. Institute a coordinated nationwide recreation plan to produce a system of recreational developments by each level of government, federal, state, and local, each bearing its proper share of the expanding recreational load.

8. Provide for the protection and preservation of the wilderness areas within the National Park System and encourage their appreciation and enjoyment in ways that will leave them unimpaired.

Anticipating that the \$8.35 million request will be approved, the Park Service has drawn up a budget based on the "package" idea. In its report on Mission 66 the Park Serv-

ice stated that, ". . . it is important that all aspects of development and operation go forward together and in proper relationship to one another. Concentration on building roads without providing facilities for those who use them or developing a park fully without adequate operating resources, does not solve problems; it creates them. . . . Provision for just one year at a time and the spreading of funds in small amounts to a multiplicity of projects — or even parts of projects — is a highly uneconomical way to carry forward development programs. The economical use of funds and balanced and integrated development can be obtained by changing to the 'package' approach for planning, development, and staffing."

An illustration of this package
(Turn to page 58)

PRONGHORNS on Postage Stamps

NEW YORK
1887



Wildlife stamp series, designed by Bob Hines, noted wildlife artist, will be issued in 1956

By DOUG DEMAREST

EARLY French-Canadian explorers discovered vast herds of deer-like creatures bounding over the sage-dotted prairies of the Northwest. These animals, with hollow horns, large, pointed ears, and rump patches like huge, white rosettes, were pronghorns—a native North American mammal and the only one of its kind in the world.

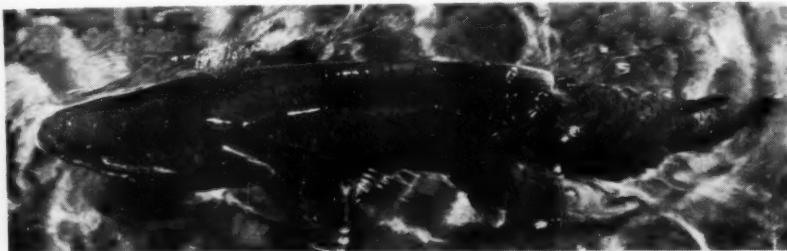
The pronghorn, or antelope as the animal is more commonly known, is the subject of the first stamp in a series of three postage stamps depicting wildlife. These stamps to be released during 1956 are designed by Bob Hines; he is the staff artist of the U. S. Fish and Wildlife Service and the illustrator of Rachel Carson's most recent book, "The Edge of the Sea." The subjects for the other two stamps in this wildlife series are the wild turkey and the king or Chinook salmon.

Issuance of these stamps is the culmination of the efforts of several people particularly interested in presenting our wildlife to the general public. For years one man has had as a goal a series of postage stamps depicting some of our native birds, fishes, and mammals. E. R. Kalmbach, formerly a biologist with the Fish and Wildlife Service, had in mind a series of wildlife postage stamps and had even drawn designs for six representative species. Then using his own money Mr. Kalmbach had these designs reproduced in black and white so that they could be presented to the proper authorities for approval as postage-stamp designs.

Unfortunately, Mr. Kalmbach found no one sufficiently interested in his project to bring it to the attention of the right people. Not even the fact that he designed the

hunting permit stamp for 1941 helped establish the sort of contact that would aid him with his project. The 1941 hunting permit stamp was a brown-carmine stamp, whose vignette was a family of ruddy ducks. Like all the so-called duck stamps, the 1951 stamp is available from the designer in print form.

Samuel E. Neel, a Washington attorney and sportsman, collects duck-stamp prints and had all of them but one. The missing print in the Neel collection was the family of ruddy ducks drawn by Mr. Kalmbach. On a trip to Denver Mr. Neel



Adult male chinook salmon in hatchery pool at Spring Creek Station, Wash.

introduced himself to Mr. Kalmbach at the suggestion of Bob Hines, who won the duck-stamp contest for the 1946 hunting permit stamp with a wash drawing of redheads. At their meeting, Mr. Neel received a print of the 1941 duck stamp and learned of Mr. Kalmbach's hope for a series of wildlife postage stamps and saw the designs which had been worked up.

Mr. Neel liked the idea of such a series of stamps and leveled his sights for a shot, or round of shots, at the proper target to get approval for the printing of such stamps. Mr. Neel scored a bullseye with his first shot; he sent the Kalmbach designs to Aksel Nielson, president of the Title Guaranty Company in Denver and the host of President Eisenhower whenever the Chief Executive is in Colorado for trout fishing.

During the President's 1955 summer vacation in Colorado, Aksel Nielson presented the idea of wildlife postage stamps to President Eisenhower whose reaction to the printing and release of such a series was positive. Ike gave on-the-spot approval for three stamps depicting our wildlife and immediately sent off a memorandum to Postmaster General Summerfield in which the President said that he would like to see such stamps issued during 1956.

Subsequently Bob Hines, as Fish and Wildlife Service illustrator, was commissioned to design all three

stamps. In addition to the antelope stamp—a three-cent brown to be issued in early spring at Fond du Lac—there will be the stamps showing a wild turkey and the king or Chinook salmon—three "firsts" as subjects for either regular or commemorative postage stamps.

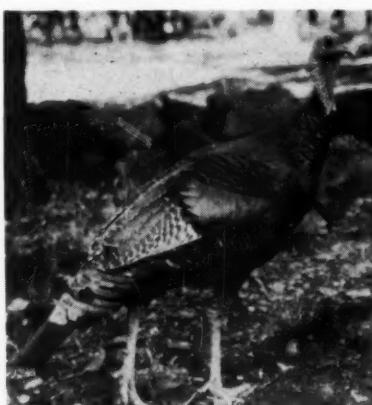
Except for the 1934 issue of ten stamps released to commemorate "National Parks Year," our postage stamps have shown little of outdoor America since the first general issue of 1847 and the first commemorative issue of 1893. In the regular issue of 1869, the ten-cent yellow showed a

bald eagle perched on a shield and the thirty-cent blue and carmine in the same series had a design of flags, a shield, and an eagle. The eagle, our national emblem since 1782, has also been shown on various imperforate official and semi-official carrier stamps; on the ten-cent ultramarine registration stamp of 1911; on the three-cent purple "Win-the-War" issue of 1942; and a bald eagle in flight is shown on the air postal card of 1949.

In 1894 the Bureau of Engraving and Printing started to print our postal issues instead of having the work done under contract by private concerns. The first commemorative stamp to show wildlife printed by the Bureau was a four-cent orange. This stamp is one in a series of nine stamps issued to commemorate the Trans-Mississippi Exposition held in Omaha, Nebraska, from June 1 to November 1, 1898. The design on the stamp is an Indian hunting group. American bison or buffalo, an antelope



Protected herd of antelope on the Charles Sheldon Antelope Refuge, Nevada



Refuges offer America's prize game bird, the wild turkey, "a new lease on life"

mal which once roamed the country in numbers estimated at sixty millions. The buffalo also appears on the thirty-cent olive-brown stamp of the regular issue of 1923 and a buffalo skull is shown in one corner of a stamp issued to commemorate the 80th anniversary of the Pony Express in 1940.

Two white-tailed deer appear on the official seal of the stamp issued in 1935 to commemorate the centenary of Michigan and a great white heron appears on the bright green stamp released to mark the dedication of Everglades National Park. If you look closely at the Annapolis Tercentenary issue of 1949 you can

(Turn to page 53)



Face of quarry will be replaced by artificial matrix and bones returned to original positions

DIGGING FOR A DREAM

By ROBERT C. BLAIR

THREE men chipping away in the boneyard of long-dead monsters are making a 50-year-old dream come true.

For two years they have been hacking at the clay and sandstone walls of famed Dinosaur Quarry in the northeastern Utah portion of Dinosaur National Monument. They are uncovering the petrified bones of animal giants that roamed this region more than 140 million years ago.

Recovery of dinosaur bones has been going on at the quarry for years. But it was only two years ago that work began in earnest on a project that has long been the dream of monument scientists and administrators.

Almost since the monument was established in 1914, there has been talk of building a big museum with

200 feet of the famed quarry's 40-foot-high north face serving as the museum's north wall. In the wall, in sort of bas-relief, were to be the bones of dinosaurs reposing just as they were deposited in the Upper Jurassic age.

At least a dozen persons claim

credit for the museum wall idea, says Dr. Theodore E. White, museum geologist, who is directing the project. "The idea is as old as Dinosaur National Monument," he chuckles.

It wasn't until November, 1953 that work on the project really got

Stegosaurus bones darkened by shellac coating to protect them from the weather



under way. A start had been made three years earlier when a huge metal and wood building that looks like a flour mill was constructed over the eastern third of the quarry's north wall. The idea was to slide the building along the face as work progressed westward. That plan was dropped when Dr. White took over.

Dr. White's small crew, recruited from men in the area, went to work in the odd looking building and soon had a number of large bones exposed.

Using an extra dark "because it's a little old" shellac obtained from Army surplus, they coated each piece to preserve it and make it stand out from the gray Morrison formation sandstone in which it is imbedded.

A board catwalk along the south side of the building takes tourists through this part of the partially completed exhibit. The fossils, the animals from which they came, are explained by small posters placed along the board walkway.

But this is only a crude indication of what the "dream" museum will be like when it is completed—some time around 1960 monument officials hope.

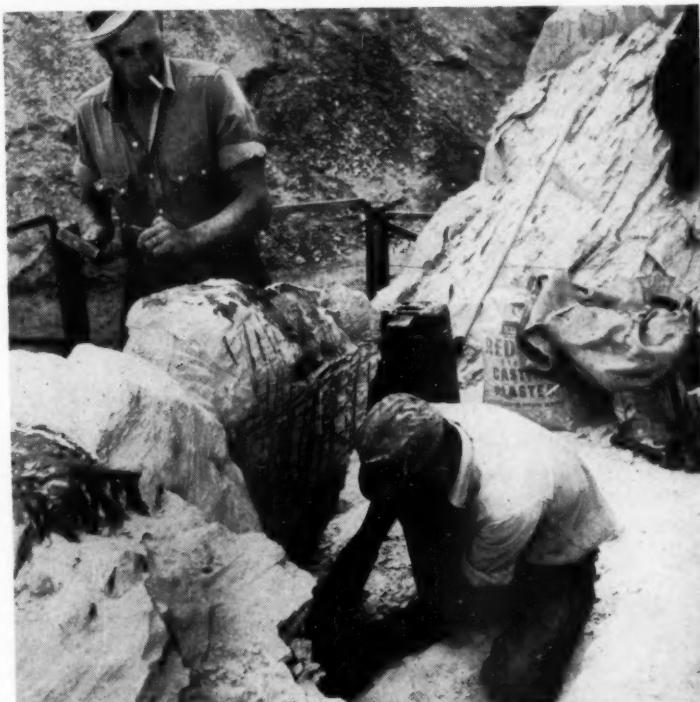
At the west end of the north quarry wall, where Dr. White and his two-man crew—Floyd Wilkin and Frank McKnight—are working, a more complex problem is being solved. Here the bones are imbedded in soft clay unsuitable for proper display of the big fossils.

To overcome this trick of nature, Dr. White is removing each bone from the quarry. When all are taken out, an artificial matrix will be substituted for the clay and the bones carefully re-embedded in exactly the same position in which they formerly rested in clay.

It's a big, long and somewhat tedious operation. As each specimen is exposed it is covered with wet toilet tissue—the varicolored hues of modern tissue being used by Dr. White prompt a lot of questions from visitors happening in on that phase of the operation.

The tissue is applied to prevent plaster, which is slapped on in the second step, from sticking to the exhibit.

A burlap strip about five inches wide is run through liquid plaster and molded to the specimen's contour. When it dries, it provides a strong protective casing for the bone. Each fossil is then cut out of the clay and taken to a warehouse. When the removal job is completed



Workmen removing clay from fossil camarasaurus. The head, neck and spine of this 30 to 35 ft. animal were found in the Dinosaur quarry



Dinosaur fossils are dusted in preparation for shellac coating. Later they are encased in burlap and plaster and removed from face of quarry

the artificial matrix will be installed and the bones "unwrapped," cleaned, shellacked and placed for exhibit.

Dr. White will use a large photograph of the quarry face to make sure that all pieces go back just as they were found. The job will take about two years.

Dinosaurs of several types will be displayed in the museum wall. There also will be a few turtles and other smaller animals of the period.

In the 47 years since the quarry was discovered in 1909 by Professor Earl Douglass, some 23 mountable skeletons have been removed, mostly by the Carnegie Museum prior to 1922. Twelve species were found, ranging from the 84-foot-long diplocodus to the 6-foot laosaurus.

When the museum is completed the whole panorama will be on exhibit under one roof for the first time.

**By taking a calculated risk
Alabama foresters were able to
save longleaf reproduction
from brown-spot needle disease
through prescribed burning**

In a successful prescribed burn, benefits must exceed all the costs and damages



The Christmas Eve

By ALBERT A. THOMAS

It was the morning before Christmas, Santa Claus was loading up, and the holly and mistletoe were being hung. Gifts were being wrapped, and the weather was just right for prescribed burning on the Escambia Experimental Forest. The south Alabama woods were damp, the north wind was swaying the tree tops, and the air temperature was near freezing. This was the weather the Escambia foresters had wanted for nearly two months. Brown-spot needle disease had invaded several large areas of longleaf reproduction on the Forest. The only practical way to save the infected seedlings was to prescribe-burn, and this was the day for the job.

Seven years of study and experience went into the planning and application of the Christmas Eve burn. The results? Nearly 1,400 acres were prescribe-burned in 4 hours by 4 men at a cost of 6 cents an acre, and damage was practically nil.

Prescribed burning is a calculated risk. The risk should be taken only after careful planning and preparation based on a thorough understanding of fire and fire behavior. The guiding principle for prescribed burning on the Escambia is the *BURNING YARDSTICK*.

The yardstick is simple. Benefits from the fire must exceed all burning costs plus fire damages. Application is more complex. A five-step procedure is used: *diagnosis, prescription, preparation, treatment, and appraisal*. When properly followed, this procedure removes most of the gamble, and fire becomes a useful tool in the longleaf forest.

DIAGNOSIS

First, exactly what areas on the forest contained heavy brown-spot infection? What damages could be expected from the use of prescribed fire? To find out, a survey was made. After the first killing frost in early November, the percent of brown-

spot infection was estimated on a minimum of 100 longleaf seedlings on each 10- to 40-acre reproduction area.

The survey showed several hundred acres of grass-stage longleaf reproduction infected with brown spot, with the degree of infection ranging from a low of 15 percent to a high of over 35 percent. Past experiments and experience have shown that areas with 25 percent or more infection in November should be prescribe-burned during the coming winter. To prevent reinfection, the area surrounding the seedlings should be burned where possible.

Longleaf seedlings can generally be burned safely if: (1) they are at least one-half inch in diameter at the root collar; (2) very little root is exposed, and (3) the seedlings are not in active height growth. The survey showed that if fire was applied properly, damage should be confined to a few scattered seedlings one to five feet high that were

already nearly dead from brown spot.

The areas that needed burning were mapped. Then, to plan for control of the fire, information was obtained on the condition of rough, natural fire breaks, roads and trails.

The diagnosis: Several large areas were dangerously infected. Fire was needed and could be applied without excessive damage.

PREScription

Next was to prescribe the fire treatment for each area—the kind of fire and the weather needed.

If the area had had a heavy rough and lots of draped fuel, a backfire would have been prescribed. Heavy roughs with draped fuel burn very hot, and unnecessary overhead scorch to standing timber would occur if headfire were used. The survey showed, however, that the areas contained a light rough—a small accumulation of pine straw and not much grass. A fast-running headfire

for applying and controlling the fire.

In delineating each area to burn, natural firebreaks such as roads and streams were used wherever possible to save firebreak construction. Nearby landowners were contacted. Letting neighbors know what's going on is always good public relations, and on the Christmas Eve Burn, permission was needed to burn two areas into natural firebreaks outside the forest boundary. This saved more than one-half mile of firebreak construction, and eliminated two heavily infected areas adjoining the forest.

Since the prescription called for headfire and a north wind, two lines about 100 feet apart were plowed and burned on the south, east, and west boundaries to control the fire where natural firebreaks were not available. On the north side of the area, only a single plowed line was necessary.

Next, was to be sure a headfire would be under way in all areas by

before weather conditions change. Another east-west firing line was therefore put in. Natural firebreaks could be used to fire the rest of the area.

A total of 9 miles of line had to be fired. One torch man can fire about 3 miles in the allotted 2 hours between 10:00 a.m. and noon. The line was roughly divided into 3-mile sections and assigned to men designated as Torches 1, 2, and 3. Since one-gallon fire torches hold only enough fuel for about three-fourths of a mile of line, refueling cans would be needed at intervals along the line. A small letter-size map was prepared to show each torch man (1) the line to fire, (2) the direction of travel, (3) locations of refueling cans, and (4) how to fire his part of the line. A crew of 3 torch men and 1 man supervising and patrolling the burning area was required.

By early November everything was ready except the most important item, the weather.

Burn

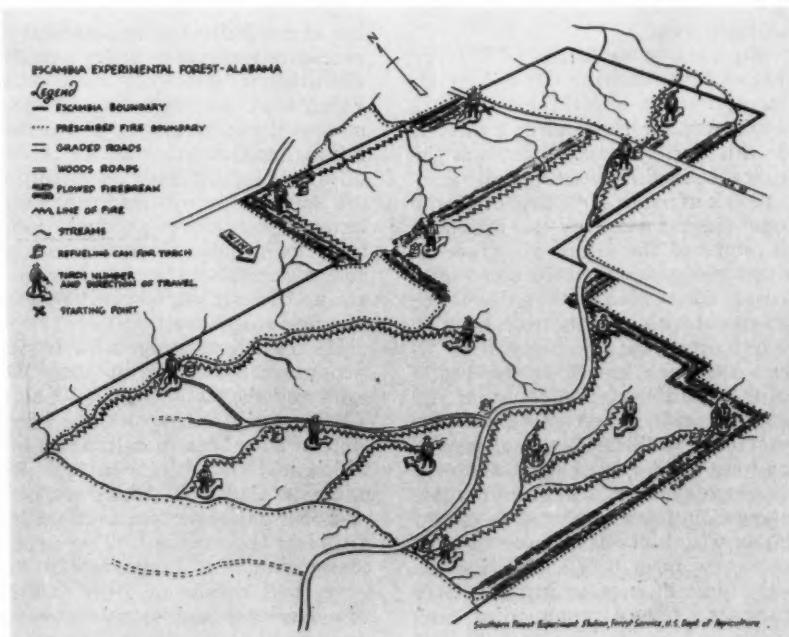
would be safe and do a better job than a backfire.

Weather is the most important factor in prescribed burning. Cold weather and plenty of ground moisture are essential. This means burning in winter as soon as possible after one inch or more of rainfall. To get a fast-moving headfire, a moderate, cold north wind is needed—north wind because it is usually dependable and steady in south Alabama. To ensure that all areas will be covered while ideal weather lasts, fires should be started by 10:00 a.m. and be completely underway by noon.

The prescription: A headfire on a day when ground moisture was plentiful and a moderate, steady, cold, north wind was blowing. The fire to be under way before noon and to cover the areas in a few hours.

PREPARATION

Successful burning can only be done after thorough preparations



The nine-mile fire line was divided into three-mile sections, and a crew of three torch men and one supervisor was assigned to each area

noon of D-day, and that burning would be completed a few hours later. The map showed that one line of fire along the north boundary would have to travel more than a mile. This is too far. Experience has shown that one-half mile is about the maximum for the time allowed in the prescription. Otherwise, the fire may not be completed

TREATMENT

It was the day before Christmas, Santa Claus was busy with his myriad preparations for his trip that night, but the weather was just what the doctor ordered for prescribed burning. There had been almost 3 inches of rainfall in the past 3 days. Air temperature was down to 29°F. A

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SEED AND THE SOIL BANK

Farm forestry will get a shot in the arm if Congress approves the Administration's new soil bank proposal

By John B. Woods



John B. Woods

WITHIN three weeks after President Eisenhower sent his Agricultural Program to the Congress the House of Representatives unanimously enacted a part of that program, relieving farmers of some sixty million dollars of federal tax on gasoline used in producing their crops. It is expected that the Senate will move with celerity to complete this particular piece of legislation.

Such action confirmed what everybody knew—that the law makers are anxious to do something helpful in a big way for the country's farmers in this election year. There was significance in their attacking the gasoline tax as a first objective, of all the remedies proposed by the President it appeared the safest. No great reduction of government income would ensue, and a Member could vote for its repeal without admitting, even by implication that his party erred in enacting such a law in the beginning. With respect to most of the other items in the recommended program the problem is less clean cut and not all simple of solution.

According to Washington pundits, every Congressman nowadays carries about with him one or more versions of a new farm bill, embodying his own ideas of how to increase farm incomes, reduce commodity surpluses and glorify his party. Out of this welter of proposed legislation, something surely must come; but it is a reasonable assumption that a considerable period of time will elapse before the final Act is framed and finished to the satisfaction of both Houses and the Chief Executive. Meanwhile, to most people familiar with the uses of land it appears that there are technical matters to be faced, no less puzzling than the political considerations.

The heart of the Administration's farm proposal is the Soil Bank. In

explanation of the purposes of such a device the President declared that future production of the crops which are in greatest surplus must be adjusted to accumulated stocks and to potential markets. Further, producers of other crops must not be subjected to the competition of excessive production from acreage diverted from surplus crops. Lands poorly suited to tillage, now producing unneeded crops and subject to excessive wind and water erosion, must be retired from cultivation. Faced with the staggering fact that most of the communities in America, not to mention hundreds of laid-up ships, are stuffed with commodities, the President recognizes further that farmers nowadays produce more from their fields than ever before, and actually farm more acres than are needed for our present population and world markets.

He sees the Soil Bank as having two components, the Acreage Reserve and the Conservation Reserve. The first will consist of lands which are and have been in cultivation but which will be withdrawn and permitted to lie fallow during the next year or two or three, until suffocating surpluses are removed. The second component, the Conservation Reserve, will consist of areas "which wise land use and sound conservation would have kept in forage and trees." Proposed utilization of such areas might be pasture, water storage or forestry, or any combination of these which makes sense as a long-term, farm management plan. The acreage reserve is planned as a temporary mechanism—Secretary Benson, in his talks about the proposals suggests that three or four years should suffice to permit accomplishment of its objectives. The other is seen as a long-range program, which will be formalized by contracts between the farmer and his govern-

ment running for five or ten years. Lands committed to improved pasture, ponds or trees probably would become permanent adjuncts to most farm establishments.

Reduced to its essentials the proposal seeks to lower the volume of commodities produced on our farms by taking a part of the tillage lands out of cultivation and by putting large areas of poorer land out of the reach of emergency use for producing crops. It is not intended that soil withdrawn from production of wheat, corn, cotton or rice shall be used for other crops, at least until the surplus situation has been corrected and markets are available. Livestock shall not be grazed on Conservation Reserve acres. Cooperation is to be voluntary, and in order to obtain wide-spread participation by farmers the government proposes to offer liberal premiums.

An idea of how liberal Uncle Sam would like to be can be obtained from news stories of a meeting of the Senate Agriculture Committee, reportedly held in Washington on February 3. Under Secretary of Agriculture True D. Morse told the committee members that the Department would suggest taking 44 to 50 million acres of land out of present production. The government would propose paying farmers from 800 million to a billion dollars. For diverting land from wheat, cotton, corn and rice, farmers might receive one-half this year's support price on the crops their withdrawn land could have been expected to produce. Presumably a part of this payment would be in surplus products from the government's stocks, in cases where farmers wished to sell or feed larger quantities than their reduced tillage areas could yield. But substantial amounts would be in cash.

The department proposed that under the long-range conservation

program for planting grass or trees or digging reservoirs and ponds the farmer would receive an annual rental of ten dollars per acre plus 80 percent of the cost of such planting, which might amount to eight or nine dollars per acre. It is interesting to note that the Chairman, Senator Ellender of Louisiana, stated that most members of his committee were favorably impressed by the Administration's program. It is disquieting, however, to learn that the committee voted later and split on party lines, with the majority advocating return to rigid supports as a part of any measure.

All this interests the layman, because we all know that something must be done to place the farming community in proper economic status with the rest of the nation. The program arouses enthusiasm, but presents questions of how the job can be most satisfactorily accomplished. Both the President and Secretary Benson have voiced the hope that at least 25 million acres may be placed in the Conservation Reserve, and apparently both were of the opinion that three years would suffice for setting it up.

American agriculture presents a somewhat varied picture, characterized by regional differences and differences within regions. Traditionally, the farm is seen as a body of land large enough to support a resident family, and having certain areas devoted to growing foodstuffs, forage and possibly fibres, other areas used as pasture and/or woodlots. Essentials in this picture are a set of buildings adequate to house humans and animals throughout the year, and a supply of water. The oldest farms established by white men in what is now the United States, along the Atlantic Coast from Maine to Florida, fit such a description. Their products are foodstuffs and fibres, and in a limited measure commercial timber and other forest goods. It is generally agreed that throughout this region farm woodland forestry falls short of optimum productivity, partly because the farmers upon such lands do not have the know-how to apply forestry principles, and partly because until recent years there have not been enough markets for farm-grown tree products.

Nowadays conditions favor woodlot forestry everywhere between the Mississippi and the Atlantic and farmers should be interested in the proposed Conservation Reserve. Even in the Central Corn Belt, where land is intensively tilled and

woodlots have suffered attrition almost to the vanishing point, there should be merit in the forest conservation proposal. And in the vicinity of the Great Lakes well cared for woodlands offer the best possible use of sandy areas and spots too rough for successful tillage.

The Great Plains present problems which have been receiving attention since Dust Bowl days. Chief among these problems is the dearth of grass and water. Most needed are re-establishment of the former and provision of adequate supplies of the latter. From the forester's point of view, there is danger in a plan to plant large areas to timber trees in localities where yearly rainfall is too meager to support natural forests. Yet there are thousands of hand-planted shelter belts in this region, and up in northwestern Nebraska is one of the outstanding man-made forests of North America. Trees will grow in places where moisture is low, if suitable species are planted, and often the small plantations create conditions favorable to enlargement of such stands. Thus it may be suggested that even in the plains region trees may form an important instrument of the conservation program, if their use is supervised by people familiar with the special problems.

Leaving out of consideration the great, machine operated ranches of the west, there still remain thousands of farms between the eastern slope of the Rockies and the Pacific Ocean where woodlot forestry could be of great benefit to farmers. Here on the west side of the Cascades and among the Coast Range foothills we find farmers beginning to plant the less tillable areas of their farms to young conifers to sell after a few years as Christmas trees. All three kinds of land use, grass, trees and water reservoirs may find application on a truly tremendous scale in the country's western half.

Foremost among the questions to be answered in putting the Soil Bank proposal into effect are those of personnel and seeds or planting stock. If we assume that the overall average size of fields to be placed in the Conservation Reserve will be twenty acres (probably too high), and if we assume further that three years will be required for putting the program into effect, then it would appear that on the average 416,667 farmers must be dealt with each year, which probably means that more than half a million applications will be processed. A few hundred federal and

state foresters and other technically trained men will be available for counsel and assistance in the forestry work, and the considerable staff of County Agricultural Agents doubtless will greatly assist with the field work in all three categories, grass, forests and water. The work of passing upon such a great number of applications might properly be assumed by the local farmers of each county in the affected states, through their Agricultural Conservation Committees, which already are organized and functioning to carry out woodland improvement under existing statutes.

The question of seeds and planting stock has puzzling aspects. There should not be great difficulty in securing grass seeds sufficient to cover the areas which are to be seeded. But tree seed crops are not reliable in many regions, and there might be regional dearths so serious as to delay the entire forestry program. Undoubtedly, some farmers would desire to seed their woodlands, a task demanding skill, persistence and the use of poisons to discourage mice and other seed-eating creatures. It is unlikely that a large portion of the forest area would be restocked by directing seeding.

It is surer and less costly to use small trees grown in nurseries, fewer seeds are required and rodent damage is minimized. Using the 25 million acre figure and assuming that under favorable conditions two-fifths or ten million acres will be offered for tree culture, one arrives at a possible figure of more than three million acres per year to be restocked over a three year period or two million acres annually for half a decade. A reasonable estimate of the average number of small trees needed would be one thousand per acre, or from two to three billion plants each year.

While this writer knows of no very large stocks of tree seeds held for emergencies, it is believed that enough seeds of commercial timber species are on hand in the various regions to increase nursery planting 15 to 20 percent above 1955. Thus in the South small beginnings might be made in planting conservation reserve areas next winter and elsewhere two years hence. But collection of sufficient seed for the big job must await the 1956 cone crop. If nature produces the cones, enough seeds can be gathered without great difficulty, but not before autumn of 1956.

(Turn to page 49)

NOW

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10% bigger payloads!

Model "75" ... boosted to 20 yds heaped
(without sideboards) ... 262 hp.

Model "55" ... boosted to 14 yds heaped
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Wide-base tubeless tires and windshield, shown, available as optional equipment.

Wider "Target" Push-Block
makes it easier to make and maintain contact. Helps to cut loading and cycle time.

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Sturdy Cover Plates
protect new, stronger cylindrical ram and air tanks.

New, Straight-Back Bowl
lets you heap and haul more dirt every trip. Struck capacity, *with sideboards*. 18 cubic yds on "75"—12 cubic yds on "55".

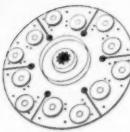
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arms mounted outside bowl, assure quick, positive closing of apron. Payscraper holds the load from cut to fill.

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PROBLEMS OF WATER

By OVID BUTLER

Of all the natural resources with which the United States is blessed, abundance of fresh water is most vital to the welfare of its people. This is self-evident when one considers that water is essential to all life, both of man and animal and all vegetation. Sources of fresh water are the rivers, streams, lakes, ponds, springs and the soil which stores some of the rain and snow that falls upon the land. From these sources come the water for human consumption and other domestic requirements; for the production of food, forage and fibre crops and of livestock, for countless industrial and social needs.

To serve these multiple requirements, water conservation involves, first, provision for adequate and dependable supplies; second, control of streams and surface run-off from the land, prevention of floods and soil erosion; third, removal by drainage of excess waters on valuable land; and, fourth, prevention of wastage in water use. The great natural forces affecting precipitation in the form of rain or snow are for the most part beyond control of man. The manner of distribution of water in streams and on land can be controlled through engineering works, skillful use of land and its vegetative cover, and economy in use.

Problems of water conservation are intimately interwoven with the use of land. Water is the chief force of erosion which is responsible for the fashioning of valleys, stream channels, and other familiar land patterns. Nature tends to clothe the land with vegetation, greatly retarding the movement of the soil on slopes. Forests, brush, grass, and other plants anchor the soil with their myriad roots, and in various ways contribute to conservation of both water and soil.

BACKGROUND OF WATER CONSERVATION

For almost 300 years after settlement of the country began, the need of conserving inland water received little public concern. Like other virgin resources, the supply of fresh water was considered inexhaustable and was used accordingly. It was not until late in the 19th century that water became recognized as a resource meriting national protection. This was in 1897 when Congress passed the act of June 4, providing that withdrawals of federal public lands as forest reservations (later called national forests) should be managed for the two-fold purpose of protecting the forests and water-flows within their boundaries. The act was limited in its application to forest reserve lands in the West but its principle was extended to other parts of the country fourteen years later by the Weeks Act, (sometimes called the Watershed Act) authorizing the establishment of national forests by federal purchases of land in other sections of the country to protect the watersheds of navigable streams.

Prior to this, the federal government's dominant concern with inland waters centered in the improvement of navigable waterways, over which Congress in 1824 had assumed jurisdiction under the commerce clause of the Constitution and had authorized the Army Engineers to engage in river and harbor improvements on the Mississippi and Ohio Rivers. The object was to promote transportation, internal commerce and settlement of the vast areas of public lands in the middle and far West.

The Acts of 1897 and 1911 introduced the conservation of water resources as an object of government

policy, linking it with forest preservation as an interacting measure of protection. Although water problems were still in their infancy, and involved mainly the physical diversion of existing supplies to municipal, industrial and agricultural use, the two Acts are of historical significance in that they marked the real beginning of an expanding federal policy of conserving the country's natural resources in the interests of public welfare. They also started people to think in terms of watersheds as geographical boundaries of water supplies upon which they are dependent.

FORESTS AND WATER

The water-forest link was based upon the then prevailing view of the influence of forests in regulating surface and underground water flows. This influence is much better understood today than it was 50 or 60 years ago as the result of subsequent forest, soil and water research. Simply stated it is that virgin or properly managed forests directly affect the flow of streams by lessening and sometimes eliminating the quantity and velocity of water moving over the surface of the land. A portion of falling rain or snow is intercepted by the crowns of trees and evaporated into the air; a portion reaches the ground and infiltrates into the soil where some is used by the trees and other plants for growth and the remainder moves downward into the soil and is stored to feed springs and streams. The influence upon permanent or sustained underground water flow varies greatly depending upon many factors—type and density of the forest, character of soil and underlying formation, local or regional climatic conditions, etc. The type of forest cover as well as other vegetative cover, that will best provide maximum service in regulating waterflow in a given area, therefore calls for special study of forest, soil and water conditions within the area. There is no common rule of thumb that applies everywhere.

"Problems of Water" is taken from the book AMERICAN CONSERVATION by Ovid M. Butler which will be published by AFA.



Ovid M. Butler, distinguished conservationist and former editor of AMERICAN FORESTS

On the other hand, it is well recognized that the presence of forest and other vegetative cover renders a high service in protecting the soil against erosion by reducing and slowing down the action of water reaching the ground. The humus and litter with which trees and many other plants enrich the soil, facilitate the infiltration of water into the ground, and their roots aid in its percolation to greater depths. These conditions together with the trunks of trees, undergrowth of shrubs and general ground debris serve as checks to the rapidity of water run-off and as a protective guard against soil erosion and siltation into streams, canals and reservoirs.

GROWING DEMANDS FOR WATER

Since passage of the Acts of 1897 and 1911, the nation's need for water has grown with accelerating speed until today the conservation of water has become one of the pressing resource questions of the times. The upward trend in population, expansion of industries, technological developments in agriculture and manufacture, extension of electric power, higher standards of living, are some of the many reasons why requirements for water have reached serious proportions in many sections of the country. These requirements may be broadly grouped as follows:

Of first importance is the requirement for safe drinking water—a basic factor of public health—and

other domestic uses. In pioneer days, all household water was obtained free from local wells, springs, streams, lakes or ponds. Concentration of population in towns and cities gradually compelled reaching out to distant sources and the storage of water in reservoirs to meet the growing needs of people and urban industries through installation of water serving systems owned by public or private utility companies. Today about sixty-five per cent of the population is dependent on such water supply systems. Many communities progressively have had to go longer and longer distances for water to keep pace with their population requirements. For example, New York secures some of its water from sources 125 miles distant and Los Angeles pipes water from distances as far as 450 miles away.

In point of volume consumption of water, agriculture ranks first. Half of the water used in the United States is for the irrigation of lands for the production of food, fibre and pasturage crops and of livestock. Since passage of the federal Reclamation Act of 1902 to develop western arid lands for agriculture, irrigation has spread rapidly throughout the West and more recently to the middle West and the East to supplement seasonal shortages of local water. The estimated irrigated farm acreage in the United States in 1954 was 26 million acres, an increase of 40 per cent since 1939.

The second largest user of water is industry with its thousands of plants throughout the country engaged in supplying products and services demanded by a growing population. Industrial expansion, particularly during the past two decades, has been a marvel of the nation's economic advancement. Technological developments have multiplied the growth of old industries from coast to coast and introduced new ones in such fields as plastics, chemicals, air conditioning, atomic power, food preservation, and other heavy water using industries.

THE NATIONAL WATER SUPPLY

The national supply of fresh water available for use is a matter of approximation. According to the United States Geological Survey, the average annual precipitation in the United States is around 30 inches, of which 22 inches are lost through evaporation into the air and through

transpiration by plant growth. The remaining seven or eight inches is surface run-off into streams and lakes or into the earth to form underground water supplies. The Survey's estimate of the present national demand for water amounts to only about 13 per cent of this residual yearly supply. Thus it would appear that the nation's usable water resources are much in excess of current water requirements. The critical phase of the situation, however, is that the supply is not equally distributed over the country geographically. Normal precipitation varies from over 100 inches a year in some sections to 5 or 10 inches in others. Furthermore, normal precipitation for given areas is often adversely affected by drought years or cycles that temporarily deplete the water supplies available to them. The variability of precipitation and weather conditions, therefore, reduces the question of fresh water sufficiency to one of supply and demand within the limits of local or regional water accessibility.

WATER SHORTAGES

Within less than a generation, constantly mounting requirements for water have brought many communities and areas of the country face to face with water shortages. In some cases, actual shortages exist. This is particularly true of the drier portions of the country—the southwestern states including southern California and the Great Plains from Canada to Mexico. Even in the more humid East many millions of people are threatened with inadequate supplies of usable water. Throughout the nation, larger and larger expenditures are being required by public and private agencies in different regions to reclaim unfit water and to develop new sources of surface and underground supplies. Continued overdrafts on underground water resources have lowered water tables in many localities making more difficult and costly replenishment of supplies and at the same time bringing some communities closer to actual shortages. In some watershort sections, competition for water is becoming increasingly intense and a score of states have passed laws designed to apportion the supply and to protect the rights of established users. While such situations are local and sectional, they have become so widespread as to be a serious burden upon the economy of the nation as a whole.

CAUSES OF WATER SHORTAGES

In addition to the regional variability of fresh water resources and rising population demands, other factors have contributed heavily to the present situation. Profligate use of water is one. Traditionally, citizens, municipalities and industries have wasted water in great volume taking for granted that nature's supply is unlimited. With the growth of extensive irrigational agriculture, a heavy waste burden was added to many local and regional supplies by the use of water in excess of that required by crop growth.

Pollution of used and unused water is another major cause of wastage. Much of the water used in the United States today is reused for one purpose or another, but great quantities become so badly polluted with untreated sewage from cities and wastes from industries, as to be unavailable for use. Congress recognized pollution not only as a water depleting factor but as a menace to public health by passing a Water Pollution Act in 1948 authorizing

the Public Health Service to cooperate with states and municipalities in developing effective programs of pollution control.

A third major source of water losses is floods that become so large they cannot be controlled, or so loaded with silt and debris that their waters are unfit for impoundment and use. These three factors — floods, siltation and pollution — constitute a multiple problem, the solution of which is basic to successful water conservation locally and nationally.

Other causes, less apparent than the foregoing, have contributed to water shortages. One is lack of knowledge of local water resources, coupled with lack of their protection. Many communities today are overdriving on their water resources in ignorance of their sustaining capacities. As long as overdrafts continue without adequate protective measures to conserve the principal, water depletion, often made critical by prolonged droughts, may be taking place.

Unsuspected by the average citi-

zen, a very large amount of water is consumed by plant growth through the complex process of transpiration. All plants require water during growing seasons, some more than others. From this it might be concluded that plants of uneconomic value represent a net loss of water-yield were it not that vegetative cover of watershed lands may have offsetting values in retarding surface run-off of precipitation and in controlling soil erosion, the main source of siltation in flood flows. The relation of vegetation to net gain or loss of water supply has been insufficiently determined to draw general conclusions. Research already done in this field, however, indicates that as between watershed areas there are so many different influencing factors involved that the best type of vegetative land treatment calls for advance study and determination of local conditions prevailing.

Other causes of local shortages are careless use of water, particularly in metropolitan areas, lack of apportionment of the supply among different classes of users and competition between areas. An upstream community, for example, that wastes or over-uses its surface waters may reduce the amount of water available to downstream communities. While a good many states have laws or inter-state compacts designed to apportion water use and protect the rights of users, the number is all too few.

SOCIAL-ECONOMIC ASPECTS

The present situation emphasizes the importance and complexity of public efforts to solve the problems of water conservation and control. The seriousness of the situation is further underscored by probable future requirements for water. From a present population of 160 million people, a population growth to 200 million or more people in 1975 is estimated, indicating a continuing rise in demands for water and in pressures on available supplies somewhere in virtually every major river watershed of the nation. To assure usable supplies of water where they are needed geographically throughout the nation and by means that will safeguard lives, health, property and social-economic activities of the population, whatever it may be from decade to decade, is a super challenge to the

(Turn to page 44)

AFA's Program for Water Conservation

The conservation of water has become a problem of nation-wide importance and concern. Great sums are being expended yearly to protect watershed areas or to prevent soil erosion and sediment damage by uncontrolled runoff of water. The acuteness of the situation is emphasized by the increasing number of areas seriously threatened by shortages of water for domestic, industrial, agricultural or recreational uses.

We recommend recognition of water conservation as of paramount importance in the management of many public forest and range lands. Public agencies should provide for:

- 1—Management of timber and grazing resources to improve the quantity, quality and regularity of water flow needed for domestic, agricultural, industrial and recreational use, and to prevent and eliminate water pollution.

- 2—Coordination of planning and application of watershed-management and flood-prevention measures on upstream forest, agricultural, and range lands with the construction of downstream flood control and water power development projects.

- 3—in federal dam and water reservoir projects, consideration of their impact on public and other lands and provision for replacement to the extent practical of impaired facilities and services.

- 4—Public acquisition of forest and range lands where watershed

protection and management are of very high priority.

The Flood Control Act of 1936 and subsequent amendments passed by Congress initiated a national policy for the study and improvement of critical upstream watersheds. Reports on some 60 such watersheds have been submitted to Congress which has approved 11 of them and has authorized the recommendations for maintaining forest cover and other water conservation works. This upstream watershed program is under the direction of the Secretary of Agriculture and is now being implemented through the Soil Conservation Service and the Forest Service. The Corps of Army Engineers and the Bureau of Reclamation are charged with planning downstream storage and diversion structures.

The management of forest lands plays an important part in the success of this program. Unofficial estimates are that at least three-fourths of the total forest area, commercial and non-commercial, are of critical importance for flood and sediment control and for surface and underground water conservation.

It is encouraging to note that in addition to the public agencies, numerous organizations, privately sponsored, financed and managed, have become active in the fields of water conservation, flood-control and prevention of erosion and sediment damage.

RECOMMENDATIONS for Sound Water Policy

A Report by the Presidential Advisory Committee on Water Resource Policy

A sound water policy must look toward an adequate supply of water for our people, prevent waste, reduce water pollution to its lowest practicable level, provide means for the best and most effective distribution of water, improve navigation, and take steps to check the destructive forces of water which destroy land, property, and life. There are many different problems in different areas. It is neither practicable nor desirable to have only federal responsibility. There is no single "national" water problem.

It is recommended:

1. *Basic data.*—That the present program of basic data collection (such as rainfall, stream flows, and hydrology) be accelerated, and be programmed and carried out on a more consistent and definite basis.

2. *Planning.*—That planning for water resources and related developments be conducted on a cooperative basis with representatives of all federal, state, and local agencies involved; and that this joint participation be continuous from the beginning in order that plans and projects developed assure the best and most effective use and control of water to meet both the current and long-range needs of the people of a region, state, or locality, and of the nation as a whole.

3. *Organization.*—That an organization plan be adopted substantially as follows:

(a) The position of Coordinator of Water Resources be established to provide Presidential direction to agency coordination and to establish principles, standards, and procedures for planning and development of water resources projects.

(b) An independent Board of Re-

view be created to analyze the engineering and economic feasibility of projects and report to the President through the Coordinator.

(c) Regional or river basin water resources committees be formed with a permanent, nonvoting chairman appointed by the President and with membership composed of representatives of all federal departments and states involved.

(d) A permanent Federal Inter-Agency Committee, advisory in character, on Water Resources be established under the Chairmanship of the Coordinator composed of principal, policymaking officials of the agencies concerned.

4. *Water rights.*—(a) That the principles which recognize water rights as property rights be accepted. That determinations as to disposition of water recognize such rights.

(b) That a study be made by the federal government in collaboration with state and local entities to determine the relationships between property rights to water and the social and economic development of the nation and the area, and of the principles and criteria which should be incorporated into federal, state, and local laws regarding rights to the appropriation and use of water that would assure its best and most effective use and at the same time encourage maximum participation by all parties concerned.

(c) That states enact legislation regarding the ownership and right, purpose and place of use of underground water.

(d) That formation of interstate compacts where appropriate be encouraged.

5. *Priority of use of water.*—That no system of relative priorities for use of water should be applied uni-

formly to the entire country.

6. *Evaluation.*—That evaluations of water projects by all agencies be on a uniform basis, requiring balanced consideration of all benefits and costs which can reasonably be measured in dollars, as well as consideration of other values not readily expressed in monetary terms.

7. *Authorization.*—That each major water resources project be separately authorized by the Congress.

8. *Cost Sharing.*—(a) That, as a general policy, all interests participate in the cost of water resources development projects in accordance with the measure of their benefits; that the federal government assume the cost of that part of the projects where benefits are national and widespread and beneficiaries are not readily identifiable; that power and municipal and industrial water users pay the full cost of development; that where projects are primarily local, and the beneficiaries are clearly identifiable, the federal government's contribution should be limited, with non-federal interests bearing a substantial portion of the construction costs of the project as well as the replacement, maintenance, and operation costs; and that under certain conditions the federal government may bear a higher proportion of the costs.

(b) That the federal government encourage non-federal assumption of responsibility for construction of water resources projects by such means as the payment of costs which would have been non-reimbursable had the projects been federally constructed, and the making or guaranteeing of loans to non-federal interests for certain purposes under proper safeguards.



Clayton Hoff, Brandywine Valley Assn.
told how a community watershed works



DeWitt Nelson of California spoke on
upstream water conservation measures



Policy of multi-purpose planning was
explained by Brig. Gen. W. E. Potter

ST. LOUIS Watershed Conference

A NATIONAL water policy that stresses the administration's partnership concept, shuns concentration of power in the hands of federal agencies, proposes to double and in some cases triple water research and which would create a new post of Coordinator of Water Resources in the office of the President was outlined in St. Louis, Missouri, last month by Clarence A. Davis, Under Secretary of Interior. These proposals were approved for the most part by businessmen and water specialists in attendance at the Water Policy Conference of the Chamber of Commerce of the United States. The plan was scored by Leland Olds, of the Public Affairs Institute, as a retreat from federal responsibility in meeting the nation's water problems.

Striking unanimity of thought on the part of foresters, representatives of the Corps of Engineers, and watershed associations also proved to be another feature of the meeting. Ten years ahead is today in water planning programs, these specialists agreed. Recognition of the other fellow's problem, the interdependence of the various types of program on any given river system and the importance of teamwork—all these things were recognized by these three fields ranging from upstream forest lands to downstream engineering works as represented by DeWitt Nelson, director of California's Department of Natural Resources, Clayton M. Hoff, executive vice president of the Brandywine Valley Association (Pennsylvania and Delaware) and Brigadier General W. E. Potter, Division Engineer of the Missouri River Branch of the Corps. At the conclusion of Mr. Hoff's illustrated

lecture on the progress of his citizens' organization, General Potter said admiringly, "I wish we had 1,000 Clayton Hoff's at work on the Missouri—and we will too someday."

In his address, Under Secretary Davis told the conference, "I should like to impress four things in the beginning, first, there is not a water problem, but there are many water problems; second, while these problems are nationwide, they are not necessarily national; third, that there is no magic formula which can be applied nationwide as a solution of these problems. Lastly, the policies we adopt go to the heart of our national economy and ultimately to our very form of government."

"What we do with reference to creating supplies of water," he said, "determines the locations of great industries . . . the location of population . . . the advancement or the liquidation of substantial areas of our country, especially if the federal government's development contains elements of subsidy."

Under Secretary Davis then referred to the recommendations of the Cabinet Committee which President Eisenhower had appointed to "undertake an extensive review of all aspects of water resources policy."

The first part of this Report deals with the necessity for "increasing the appropriations to the scientific agencies for the production, correlation and evaluation of basic data," Under Secretary Davis explained. "We have cases in which the water supply available has been overestimated due to lack of adequate scientific information. We have a woeful lack of knowledge of our underground water supplies, with the result that in

some cases we are pulling down underground water tables 20 times as fast as they are being replenished," he said.

(Regarding this urgent need for scientific research, the committee's report specifically recommended the establishment of 5000 new precipitation gauging stations, 4750 new stream-flow measuring stations, and 1300 new stations to measure stream sediment. The report also proposes doubling the programs for mapping, appraising and interpreting underground water resources, and tripling the chemical and biological studies of water; and, acceleration of the soil and topographic mapping and geodetic control surveys now underway, so that they would be completed in 15 years. The proposals covered by this report would expand current programs from 40 to 400 per cent.)

"It should be made clear," Under Secretary Davis declared, "that there is no one national water problem; that there are dozens of problems; and that they differ from state to state and from area to area. . . . For that reason, much of the time of the committee was spent upon the evolution of some organizational plan which would be adequately localized to give full scope to local needs, local initiative and local conceptions, while at the same time being certain that it conformed to the general national welfare."

Using this principle as a guide, the committee recommended that "regional or river basin levels water resources committees should be established from time to time for such purposes and duration as required; that the President should appoint a permanent non-voting chairman of each committee," Under Secretary Davis told the meeting. "These water resources committees should be the principal and continuing medium



Interior Under Secretary
Clarence A. Davis

through which the various departments, state and federal, coordinate resources planning and development activities."

Other organizational procedures which the committee recommended were enumerated by Under Secretary Davis. These include: an inter-agency committee on water resources, composed of representatives of the affected departments; an officer appointed by the President charged with responsibilities in the field of water resources; and, the appointment of a Board of Review, composed of experts in the resources field, but who have no connection with the projects submitted to them and have no personal interest in the construction of these projects or the agency assigned to build them.

Under Secretary Davis said, "It is felt that this Board should evaluate in the light of policy enacted by Congress and criteria established by the Coordinator of Water Resources all the water resources reports pro-

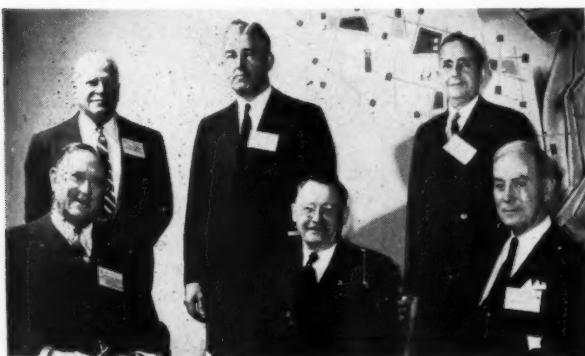
posing federal participation, whether as builder or contributor."

"The Committee closes its report by recommending federal participation in non-federal projects built by the states and their agencies," said Under Secretary Davis.

In conclusion, Under Secretary Davis said, "After all is said and done, the people who live in the region, who live close to these projects, are the ones primarily affected . . . their voice may be heard, so long as it is not inimical to the national interests . . . President Eisenhower expressed it well in a campaign speech in which he said that these resources might much better be controlled by the people who live near them and depend on them than by any long-haired bureaucrat behind a desk in Washington."

However, the report of the committee was challenged by Leland Olds, who said, "What this report proposes to abandon is the whole concept of comprehensive, multi-purpose river basin programs. This concept has already demonstrated its capacity to contribute to the progress of American life by stimulating, rather than undermining, the vitality of local institutions. It has won world recognition as an achievement of democracy."

Ralph A. Tudor, consulting engineer, told the conference that, "The partnership concept in development and conservation of the nation's water resources is not an invention of the present Administration—it goes back at least to 1897 when the federal government built a navigation dam on the Kentucky River. . . . By 1953 there were at least 26 time-tested examples of partnership on this basis with the federal government building the dams and local interests installing the power facilities."



Hoover Commission panel (front) Adm. Ben Morrell, John Jirgal, Carev H. Brown (rear) Leslie A. Miller, Frank E. McCaslin, Wesley Horner



(l. to r.) Leland Olds, Harilee Branch, Ralph A. Tudor, and Robert A. Harrier (standing) spoke on water development and conservation

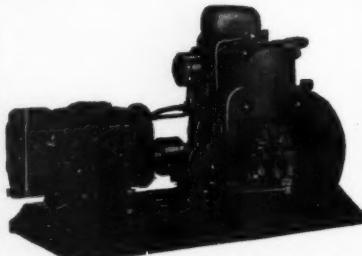
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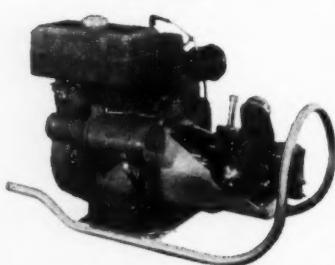
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SEATTLE 1, WASHINGTON

More Meat from the Public Lands

(From page 11)

maid school teacher from New York, was living on her homestead 30 miles south of Prineville, Oregon. She wrote in her journal: "The possession of ancestral acres is bound up with sentiment, yet—virgin soil bestows an inspiration of its own. How the centuries have toiled through fire and frost and wind and wave and springing life and long decay to lay their fields so wide and deep. They alone among the fields of earth have suffered neither neglect nor ignorance nor folly. Reverent as Adam we should come to them." (*The Homesteaders Portfolio*, the Macmillan Company, 1922). This passionate, mystic attitude fermented in many of the homesteaders.

So it was inevitable that the wave of homesteading should lap over onto millions of acres that should never have been touched by a plow. The western states have numerous deserts and so-called bad lands of every description.

Lands worthless for farming were homesteaded along with fertile Palouse wheat lands. In most cases the homesteaders had only enough to arrive, build a shanty of sorts, and get some land plowed and seeded. Settlers in such places mainly did not "prove up," or get title to their land. They lived on jack rabbits, gorgeous sunsets, and optimism for a year or two, then moved on or went back and lived with Ma's folks.

Besides the millions of acres hopefully homesteaded and dismally lost, some land was so poor, so remote, or so far from water, that it seemed worthless through the rosiest glasses of the most inexperienced homesteader. It was there for the taking and there were no takers. We gave away the continent, but kept the dregs. These dregs constitute our present public domain, as distinct from national forests and parks, military reservations, and other federally-owned lands. The eleven western states have most of this public domain.

Other states, as Minnesota, Alabama, and North Dakota, contain insignificant amounts. The total area is 168,236,447 acres, a little less than 10 percent of the total continental United States land surface, but an acre apiece for every soul in this great land.

The public domain is owned by

the citizens in common. We have never known exactly what to do with it, neither during the homestead days nor since. Fencing was unlawful. Water places were far apart.

The western pulps are full of stories of the New Mexico and Arizona deserts, but deserts exist in other states, too. One can travel for 200 miles in eastern Oregon and be in desert all the time. In Nevada this trip can be 400 miles or more. These deserts are the public domain.

At first this arid land, from the Columbia River to the Colorado, supported a stand of grass—not much grass as measured by a rich Pennsylvania meadow. Eight inches of rain won't grow much grass, but the land, like the New Englander's cow, "is a durn good-natured critter and she'll give all she kin." So the soil grew grass of a kind and of a density to fit the climate.

This wide sea of grass belonged to no one and was free. First cattlemen, then nomadic sheepmen used it. Stockmen settled along the streams and developed ranches with irrigated meadows. They tried to husband the grass, saving this or that range for a year or two to thicken it only to lose it to wild horses or an itinerant stockman. In effect a premium was paid to the man who first got his stock on the range. Conservation was impossible.

But grass in an arid region will not stand constant use. Over a 50-year period it gradually disappeared from much of the public domain. In its place came sagebrush, rabbit-brush, cactus, Russian thistle, annual grasses with sharp or barbed seeds, loco weed, the poisonous larkspur, and a whole host of other unpalatable, largely unusable but climate-wise weeds and shrubs.

Roughly, it takes 800 pounds of water to produce a pound of dry vegetation. So if enough water falls on a given acre to grow 300 pounds, and that 300 pounds is sagebrush, then that particular acre can't grow anything else. That is exactly what has happened on much of our public domain.

When resident stockmen saw their free range become worthless before their eyes, they began to bombard Congress with demands for regulation. They reasoned that if the public range could be rationed out,



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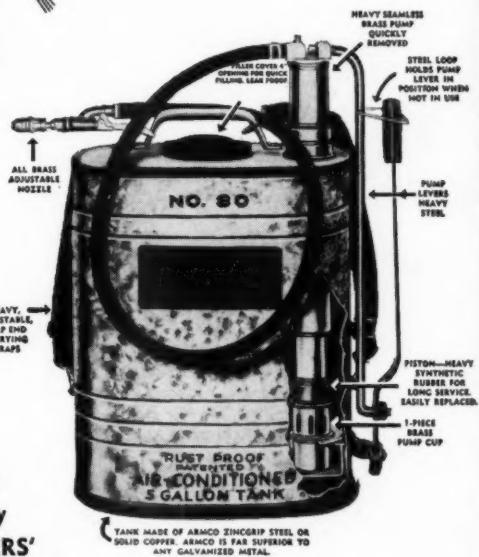
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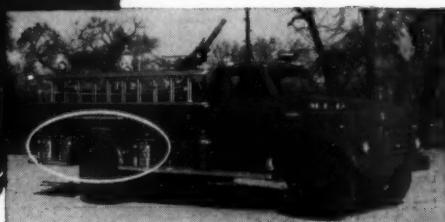
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seasons of use established, numbers of livestock cut, and a sensible grazing program established, then it might be possible to bring the grazing back.

Congress in 1934, at the demands of the stockmen, passed the Taylor Grazing Act. Congress has uneasily created and dismantled an organization to administer the lands and has lately turned creative again. In the meantime, the aged Bureau of Public Lands has been grafted onto the young Grazing Service and the hybrid is called by the resounding title "Bureau of Land Management."

The BLM has attempted to apportion the grazing privileges among the applicants, regulate the use, and thereby make these lands produce more meat for the tables of the people—the owners. These actions, necessary under the law, resulted in violent words on the range much as the Taft-Hartley Act did in town.

The BLM is sniped at by the leftist because it caters to the "cattle barons," a sinister group existing only in his peculiar type of mind. Owners of livestock blast it for trying to raise fees unreasonably and thereby make money for the public. They ask why they should pay for such things as game management, saving water for some distant city, park development, and all of the other things the Bureau is trying to do. They argue that these other things are proper enough, but that the public should pay for them, not the stockmen.

Such sectional or political rows do not grow any grass or put any meat on the butchers' shelves. Some day the idea may prevail that we'd better quit fighting over this land and get something growing on it.

There is one serious drawback to natural revegetation. If a good strong shrub is growing—a shrub unusable by livestock—that shrub won't die right away, no matter how the grazing is changed. So merely reducing the number of livestock doesn't help these acres very much or very fast. Reductions may keep good ranges from deteriorating more, but they are pretty weak medicine for a sick range. Such ranges need total removal of the unwanted plants and replacement with usable species. *And this costs money—plenty of it.*

The Bureau of Land Management has the job of administering the lands and they are doing a fine job—of administering. But the area administered by each field man is

near two million acres. Could one man with no help at all administer a big pasture the size of Delaware and Rhode Island combined? He might, but he would have precious little time left over to improve the pasture—kill weeds, plant grass, provide water, check erosion, keep up fences, drive off trespass stock, and the thousand and one things a man must do with a pasture.

Remember this land is essentially an enormous pasture interspersed with thousands and thousands of other ownerships. It should be developed as any other pasture land is. It is possible for the nation to get from it double and triple the amount of meat it is now producing. But to get that meat, development is necessary. A farmer can't get a paying crop by seeding it in among a solid growth of live weeds. This public range has millions and millions of acres of range weeds. In places one can travel for 50 miles and never be out of weeds.

The present law returns part of the grazing fees to be used in range improvements. That sounds good. But the return is so infinitesimal that it will take 500 years or more to cover the area.

BLM knows how to improve these lands. But to clear off sagebrush, reseed to good grasses, and fence the land to protect the new seeding costs close to \$10 an acre. It is so well worthwhile that ranchers are doing it on thousands and thousands of their own acres. Why shouldn't Uncle Sam do it on some of his?

The answer to that, of course, is that he should. But he isn't. He is spending hundreds of millions to get grass on farms, scarcely a cent to get grass on his own land. In the meantime, rather astonishingly, the BLM is making money for us.

We don't think of the Government as a money-making machine, but BLM receives far more than it pays out, mostly from timber and oil. But it can't use this money to improve the resource. First it must pay back 75% of it to the counties in lieu of taxes and then every dollar it spends must be appropriated by Congress for a specific thing. Congress won't be talked into improving its own farm. Public lands have few votes.

Those of us who live in the West think that millions of these acres could be improved and that it would be good business for the nation to do it. Each year our population increase is $2\frac{1}{2}$ million persons or more. We now eat 79 pounds

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of beef each, and with 2½ million more beef eaters arriving regularly to have their plates filled, that makes 197,000,000 more pounds of beef needed each year. We are getting a little more beef each year on the BLM lands, but the figure would be closer to 500,000 pounds than to 197 million.

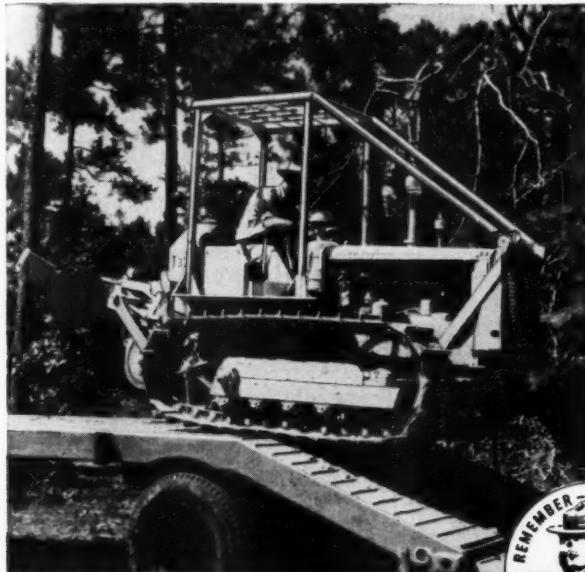
As they now stand, these lands are the single largest undeveloped resource in the United States. Full development, either by private or public means, would put meat onto many a plate now pallid with some substitute. Here is a chance for some Congressman to go down in history as a truly constructive statesman.

Problems of Water

(From page 36)

people of the United States.

The complexity of the situation lies in the great diversity of uses and interests involved in satisfying the water demands of a free and highly competitive economy. The determination of conservation measures for a given river system, for example, calls for consideration of different remedial projects which in combination will best serve the general welfare of the region. Many direct and indirect values may be and usually are involved, such as the effects upon communities of damages from floods and soil erosion, possibility of disease from polluted waters, restriction of industrial and agricultural expansion, loss of navigation facilities, depletion of waterways for recreation, fish and wildlife. Analogous questions arise in respect to lack of storage reservoirs for domestic supplies, irrigation, hydro-electric power and urban residential expansion. Planning to meet local and area situations is still further complicated by inadequate hydrological data on potential water resources that might be developed at reasonable costs. This is especially true of ground water resources of which hydrological surveys have been made in only a small part of the country. These questions arising with increasing frequency and urgency in one form or another in various parts of the country have within a surprisingly short period of years brought into sharp relief the menacing spectre of future water problems, and their effect upon the social and economic welfare of the nation.



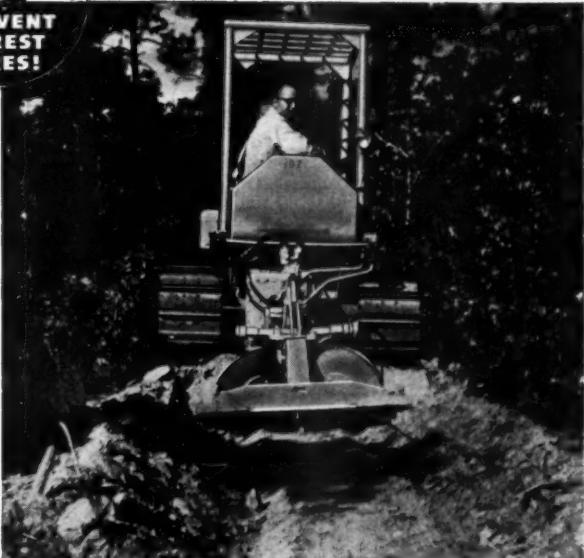
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TREND TO RIVER BASIN PLANNING

During the past half century, expenditures aggregating many billions of dollars have been made by the federal government, and lesser amounts by states, industries and private organizations in the interests of water utilization and management. Until recently, these expenditures were in the main for single purpose projects designed to meet special situations, such as navigation, flood control, irrigation of arid

lands, abatement of water pollution, development of hydro-electric power, or water storage reservoirs. Usually other public benefits to be derived from good water management were considered, if at all, as secondary or adjunct to the main purpose of the project. Gradually, a broader concept of water conservation emerged, having been given impetus by Theodore Roosevelt in 1907 who emphasized the need of considering each major river system as a whole in planning and developing its water resource potentials and in correlating with water improve-

ments the conservation of forests and other land resources. "Every stream should be used to its utmost," he declared. "No stream can be so used unless such use is planned for in advance. When such plans are met, we shall find that instead of interfering, one use can often be made to assist another. Every river system, from its headwaters in the forest to its mouth on the coast, is a single unit and should be treated as such."

A similar objective was set forth 26 years later in the Emergency Act of May 18, 1933, creating a federal corporation (the Tennessee Valley Authority) to undertake an experimental program of unified rehabilitation and development of the water, land and other natural resources of the Tennessee River basin embracing 41,000 square miles of mountain and valley lands. For a great many years prior to the 1930's the Corps of Engineers had been engaged in navigation improvements on the Mississippi and Sacramento Rivers and under special authorizations by Congress had begun studies of other rivers of the country in the interests of navigation improvements, flood control and possibilities of water power development; and since 1902, the Bureau of Reclamation in the Department of Interior has been active in the field of water management for the development of public lands in western states.

Prior to 1930, the federal government had expended over two billion dollars on navigation and land irrigation projects, concentrated for the most part on main water courses. From these two primary purpose undertakings, the building of giant dams and huge storage reservoirs has since become dramatic engineering features of the government's movement into the field of water resource developments, with total expenditures rising to over 14 billion dollars in 1954. While the bulk of these expenditures have been made for lower river works, the present federal trend is towards more comprehensive consideration of regional multiple needs for water and inclusion of these needs where feasible in its major project planning.

EXPANSION OF FEDERAL WATER PROGRAMS

In contrast to the single or primary purpose policy upon which

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the work of the Corps of Engineers and the Bureau of Reclamation rested, the TVA of 1933 introduced as a demonstration the concept of developing water resources by major tributary watersheds through programs based on multiple benefits and needs of the region involved—a concept that had been gathering support among students of water conservation for a good many years. The TVA, however, was limited to one watershed and to a long time-factor in demonstrating its success. Meanwhile, Congress moved forward to broaden the legislative base of federal participation in water conservation by passing a general Flood Control Act in 1936 which in effect asserted federal responsibility to control floods on navigable streams and their tributaries throughout the country in the interest of national welfare.

Among other things, the Act opened the federal door to such upstream projects of land and water measures as would halt soil erosion and would contribute to the abatement of floods and sedimentation. The Department of Agriculture was designated as the governmental agency responsible for the planning and execution of these projects. The Department's upstream activities were broadened and made more definite in 1954 when Congress passed the Hope-Aiken Watershed Protection and Flood Prevention Act to help farmers and other local citizens deal with small watershed problems. The Act is a share-the-cost measure which makes it possible for local groups to receive federal aid in solving flood-prevention and water-management situations in watershed areas not exceeding 250,000 acres. The legislation recognizes officially for the first time the importance of upstream water protection in an over-all water resource program.

The expansion of federal interest in water problems during the depression as evidenced by emergency policy decisions coupled with large expenditures of depression-relief funds through Public Works agencies for local, coast-to-coast land and water projects, stimulated a growing public interest in the conservation of water resources. It was not until after World War II, however, that the conservation of water resources, forcibly emerged as a problem of paramount national importance and brought into the open the public issue of broad determination of fields and types of projects for which federal, state and local agencies are

respectively responsible for water development. The issue involves a great multiplicity of water uses and interests, water-short-situations, costs of planning, executing and maintaining water conserving works, federal and state statutes, etc. Throughout the years since the war, the water resource problem has been subjected to a rising scale of critical public discussions and to comprehensive studies by numerous official and non-official commissions supplying exhaustive reports and proposals as base material for the develop-

ment of a national water program of unified and coordinated planning and action. Among the more recent major reports are those of the Water Resources Policy Commission, (1950); the Engineers Joint Council of five professional engineering associations (1951); the Commission on Intergovernmental Relations (created by Public Law 109, 1953) and the Hoover Commission on Organization of the Executive Branch of the Government (Task Force Report on Water Resources and Power, 1955).



TOWARD A NATIONAL WATER POLICY

By mid-1955, the democratic process of public inquiry and debate had defined the water situation in its ramifying parts and had set forth the problem of water resource conservation in terms of national interests. From the vast amount of data and informed proposals brought to bear upon the situation, there is now growing an agreement that a joint and coordinated program of private, state and federal participation is essential if the long-range water requirements of the country are

to be efficiently dealt with, destructive floods abated and local water scarcities avoided. The accomplishment of such a program calls for public acceptance of certain guiding principles, among them:

That water resource development and conservation are in the national interest and therefore call for national leadership.

That standards are essential for determining public and private responsibilities for planning, executing and bearing or sharing the costs of constructions for water development or control projects at different

levels of local, state, regional and national interests.

That major river basins with their tributaries and small headwater streams and lakes provide the logical area units for coordinating programs of multi-purpose projects designed to develop the maximum water and land services of the river system as a whole.

That sound river basin planning should give recognition to the mutual relationships of water conservation with other watershed resources, such as soil, forests, recreation, fish and wildlife; and to the interests of contiguous river basins when they may be involved.

That the field of federal leadership and actual participation in water management activities should be clearly defined and some type of national water resources commission created with powers to recommend broad policies to Congress and to pass upon and coordinate projects of federal agencies concerned with water use or development.

While the current trend of public opinion is strongly towards a National Water Conservation policy embracing these structural principles, numerous internal phases still are at issue. One of the most controversial relates to the extent to which the federal government should assume the responsibility, bear the costs of water development and use and coordinate the policies and work of its own spending agencies. With the mounting expenditures of federal funds in the water field, numerous efforts have been made without binding success to coordinate the programs of spending agencies through inter-agency boards and committees. An over-all governing policy for some twenty-five different federal agencies concerned with water and land utilization in one form or another is yet to be accomplished. In a further effort to clarify the federal inter-agency complex and to advance the development of a National Water Policy, President Eisenhower in May, 1954, appointed a cabinet committee on Water Resources Policy to "undertake extensive review of all aspects of water resource policy" and to submit "recommendations for the strengthening, clarification and modernization of water policies, together with a suggested approach to the solution of organizational problems involved." As of late 1955, the recommendation of the committee had not been released for publication.



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Seed and the Soil Bank

(From page 31)

After many years of gradual improvement in the rate of reforestation and shelter belt planting in the United States all agencies together have reached a pinnacle of about one million acres per year, and all the forest nurseries, operated by federal, state and private agencies, produce about one billion plants yearly. To double this rate of production would require several years, and it should be borne in mind that except in the southern states more than one year's growth is needed to make small trees ready to plant in the field. Tremendous increase in nursery facilities of all federal and state agencies and of private operators would be needed to put this program into effect.

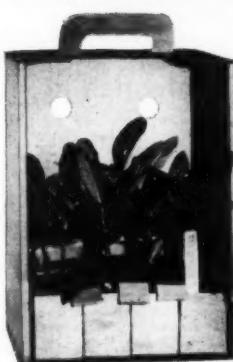
Whatever plans are perfected for securing seeds and planting stock, it is certain that conversion of several million acres of farm land to forest cannot be accomplished in one or even two years. However, if such areas are withdrawn from agricultural production the Administration's objectives may be reached within the desired time. Actual planting of trees can come later. Farmers might be required to fence such areas or seed them to non-turf-forming grasses, and to make contracts for planting stock or seed. It is possible that haste in getting trees into the ground might result in waste, if seeds or trees of unsuitable species were used, or if seeds should be obtained from site conditions too unlike those of the tracts to be reforested. These are problems with which foresters are familiar and about which informed opinion should be sought.

What if the Congress persists in writing rigid supports into the new Farm Bill? Will the President veto the result, and will the veto be sustained? If these untoward things happen we may see enactment of some quite different bill, directed at increasing the area of farm forests without reference to surpluses. Such a bill has been introduced by Congressman Cooley of North Carolina (H R 8724). This proposal would pay the costs of establishing commercial forestry on farm lands, follow with payments over five years of 60 percent of the value of the yearly increment, and finally, would lend

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ILEX OPACA female, berried American Holly *ILEX OPACA* male, pistillate American Holly *JUNIPER pfitzeri*, 6 ft. spreading, popular *MAHONIA aquifolia* (Holly-grape) blue fruit *PIERIS japonica* (*Andromeda*) white, April flower, dwarf, upright flower spikes *PYRACANTHA Lalandii* (Firethorn) orange berries *RHODODENDRON* *Carolina*, pink in May Catawbiense, rose-purple, June. Extra hardy Hardy Hybrid Seedlings, mixed colors, June *TAXUS CUSPIDATA* (Spreading Yew) broad, low *Capitata* (Upright Yew) tall pyramid name ("Brevifolia") dwarf yew Hicksi, narrow column to 6 feet

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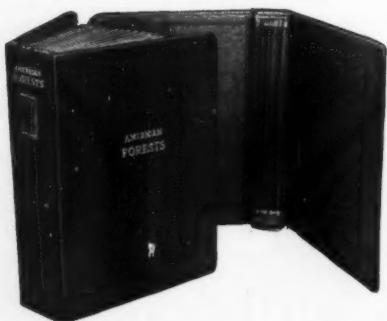
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NEW DRUG HELPS CONTROL Damping-Off GIVES AS MUCH AS 100% Protection

The drug that has proven so highly and uniformly effective is SUNOX. College tested and field proven over a period of years, SUNOX is now widely used as a standard procedure in preventing Rhizoctonia-caused diseases. A soil fungus, Rhizoctonia solani, ranks as a major agent of damping-off in seed beds and in cutting benches. It attacks liners in the field and mature plants and shrubs in the homeowner's garden.

"We applied SUNOX in a test for control of pre-emergence damping-off on both black and white spruce. Damping-off killed 75% of the seedlings in the control bed, 50% in the recommended treatment and less than 10% in double the recommended measure," reported a large grower in the Mid-west.

"A marked reduction in the mortality of the small trees was noticed immediately after application of SUNOX," another large grower in the South reported. "We made three applications on the affected areas with significantly good results."

ECONOMICAL!

1 lb. of SUNOX makes 320 gallons of treating solution at a cost of 2c per gallon and less. 1 gallon will treat 8 sq. ft. of rooting medium or 4 sq. ft. in the field. Write for prices and literature.



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the farmer 75 percent of annual increment at a rate of only 3 percent.

One way or another, it is likely that farm forestry will receive a shot in the arm during this session of the Congress. If the expansion of necessary facilities is held to reasonable speed, it is possible that progress will continue after the Soil Bank has served its purpose. A great increase in nurseries is urgently needed. Provisions must be made for collecting vast quantities of tree seeds in the years when crops are bountiful. It is likely that the present rate of forest planting can be multiplied by two or three without overloading the market among timber owners, farmers and other forest owners.

Letters

(From page 3)

Voto's *The Year of Decision* as ". . . one of the really great American books of this century . . . it is also sound history." Also—"What serious writer save DeVoto would devote 20 solid hours to sitting before a television set to prove . . ." and (He was)—"an expert reporter, an outstanding historian."

All of which is outrageously inconsistent with his patronizing description of DeVoto as "naïve" and that "his knowledge of today's lumber industry and forestry was both faulty and fragmentary." It grieves me that conservationist DeVoto cannot himself repudiate so inaccurate a charge. Whose ax is Mr. Holbrook sharpening?

Hazel Herman
Hightstown, New Jersey

Sectional Review

EDITOR:

I like the new sectional review very much and hope it will be a regular feature. I also am glad that the AFA supports the return of Aztec Lands to Sitgreaves and Coconino. The stand of the NLMA seems indefensible to me. I have written to my congressman, Barratt O'Hara, concerning this and feel sure that he will support HR 2787. This type of concrete information which can be acted upon is a useful feature of AMERICAN FORESTS.

Mrs. Donn B. Moir
5419 University
Chicago, Illinois

American Forests

EDITOR:

If you print this, my original verse, on AMERICAN FORESTS, others will likewise share my opinion of your great publication! (How About It?)

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The AMERICAN FORESTS cheers my heart,
Its facts are oh so true!
This magazine's NATURALLY smart,
We're BOUND to read it through!
So, pardon, if we BROUSE and such,
As the family reads together;
Your EDUCATION gives a touch,
That SHINES in any WEATHER!

Carol Schlichenmaier
601 Clayton St.
Orlando, Florida

The Al Sarena Case

(From page 6)

McCormick took this opportunity to defend the Bureau of Mines "dumping of alternate samples." He testified, "We (Richard Appling of the Bureau of Mines) had decided to preserve one half of the last split as a duplicate or replacement in case the shipment was lost in transit. . . When the safe arrival of the samples was assured which was when we each had received our copy of the certificate of assay number 431,869, there was no longer any use for the duplicates we had kept. So they were destroyed." He further stated, "There was never any intention of preserving the samples as umpires for check assaying. There were no instructions to do so; another irregular in not doing so. As stated before, Hattan and Sanborn never even kept their splits or any duplicate samples."

In appealing the BLM decision, the McDonald brothers, owners of Al Sarena Mines, Inc., stated that they had sent several assay reports to BLM in Portland which showed paying minerals on the claims, and that BLM had failed to send many of them to the Solicitor's office. They also complained that they had not been given a fair hearing by BLM.

Secretary Davis told the subcommittee that when he took the case under advisement, ". . . that the evidence in the Solicitor's file consisted largely of testimony by the Bureau of Land Management and the Forest Service; and that all of the evidence which the claimants said they had produced was not in the file. . ."

"In view of the substantial delays and the muddled state of the record in this case," Secretary Davis testified, "I was frankly puzzled to know what to do with it. . . The first and most obvious alternative was to send the matter back to the Bureau of Land Management in Portland to start all over with another hearing.

"At first that seemed to me to be the thing to do. I seriously considered it, but in view of the fact that five years had then elapsed during which this matter had been dragging along . . . the accusations of collusion that the McDonalds were making against the Bureau of Land Management and the Forest Service . . . the fact that the first hearing had broken up in confusion . . . that much of the evidence of the claimants either intentionally or unintentionally did not appear in the

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SPECIAL STRAIN SCOTCH PINE per 1000
Very best Christmas Tree strain. From seed collected by our men from selected parent trees. Healthy, sturdy, straight stemmed, rich color.

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Seed collected by our men from selected trees.

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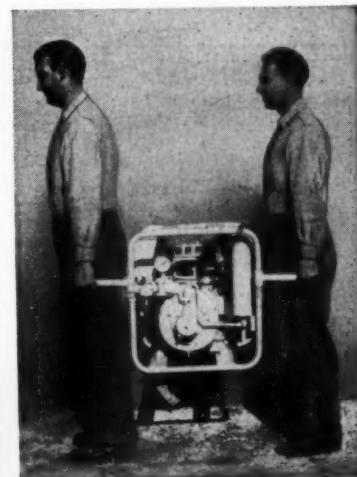
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record . . . that the hearing officer had been reluctant to render a decision . . . it seemed to me a certainty that to remand the claims to the same field office which made the original record would be a vain act . . .

Secretary Davis said, "This case was not only a different one, but one in which, in my opinion, the record was not dependable. The problem involved was to take new mineral samples, dependable samples, on these claims and to have them accurately and honestly assayed. I think it will be conceded that if assays showed adequate mineralization, these people were entitled to their patent under the mining law." He also testified that "I made up my mind that the thing to do was to submit the problem to the Bureau of Mines to secure new assays which would be dependable and beyond dispute. . . If the Bureau of Mines cannot be trusted to take mineral samples and have them properly assayed and report on them, then I wonder what agency can be trusted with an assignment of this character."

Secretary Davis then related how he had instructed the Bureau of Mines to secure samples and have them assayed. The choice of the assay firm was a controversial point throughout the hearings, and concerning this Secretary Davis said, "My instructions to the Bureau of Mines were to select an assay house that was mutually acceptable to the Bureau and to the mining engineer of the claimants. A choice of that nature, by the agreement of the parties, is a very common practice, and in this particular case seemed particularly appropriate, in view of the friction and disagreement that there had been between the Bureau of Land Management, the Forest Service and the claimants."

The Bureau of Mines had checked on the reputation of the Williams Company, and Secretary Davis said, "I felt justified in relying upon the same evidence of reliability on which the Bureau of Mines felt justified in relying." The Williams Company's assay report revealed an average gold and silver value of \$2.06 per ton.

Throughout the hearings the Interior Department had been charged with irregularities in its handling of the case. To this Secretary Davis replied, "At the time it did not occur to me to have been in any manner more expeditious than the occasion warranted. If the assays were accepted as authentic, that terminated the

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controversy. . . . You must not forget that there had been a constant complaint about delay and a constant pressure for action on this matter through the whole five-year period that it had been pending. I have intentionally quoted repeatedly from the files to show that under both the preceding Administration and my own that there had been pleas to expedite action on the matter, and numerous directives to hasten cation had been issued."

Secretary Davis concluded his testimony by saying, "I am a lawyer. This whole controversy is not now and never has been anything more to me than another lawsuit between contending parties. The problems involved are legal and are not political. I heard the case in the same mental attitude as any appellate court would hear a case on appeal, trying, from a confused record, to ascertain the truth. I regret that others have chosen to try this case in the newspapers and to try it on issues which in large part are quite immaterial to the actual problems involved. The Department has been subjected to long weeks of criticism, and I am very grateful for the opportunity, at last, of laying before you all of the facts and circumstances."

Pronghorns on Postage Stamps

(From page 25)

see a blue crab. Black bears are shown on some of the postmaster provisional stamps and coyotes and prairie dogs are on the revenue stamps of North and South Dakota. And finally stamps showing various species of migratory waterfowl have been depicted on the Migratory Bird Hunting Stamps issued each year since 1934.

All told, however, native wildlife has not been well-represented either on our regular or our commemorative postal issues. So the release of this first stamp in the 1956 series is something of an innovation; and the choice of the subject, the antelope, is something of an inspiration as it is a unique North American species.

Formerly the antelope, known, too, as pronghorn, prongbuck, and prong-horn antelope, was so numerous that there were millions of them in the western states between the Missouri River and the Pacific coast.

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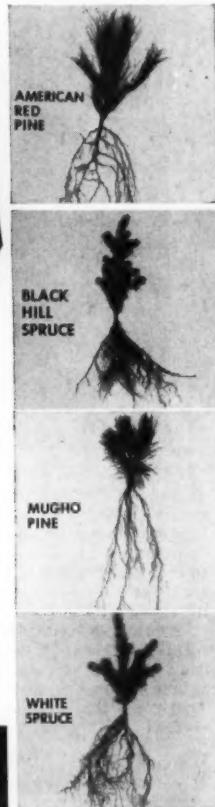
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(Membership includes a subscription, for the duration of the membership, to the monthly magazine *AMERICAN FORESTS*)

To The American Forestry Association
919 17th Street, N. W., Washington 6, D. C.

I nominate _____ (NAME OF NOMINEE—PLEASE PRINT)

whose address is _____

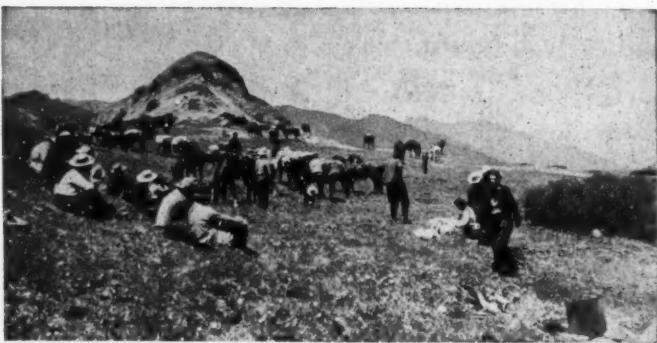
for Membership
in The American Forestry Association. Please send the nominee an Invitation to Membership which outlines the privileges and benefits of membership in The American Forestry Association.

My Name as Nominating Member _____

My Address _____

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Plan now to vacation with the Trail Riders this summer . . . ride the narrow trails in the rugged back country of our national forests . . . fish in lakes and streams . . . climb the mountain or hike around the lake . . . enjoy the companionship of fellow riders . . . relax before the evening campfire . . . sleep soundly under a canopy of stars. This can be your vacation with the Trail Riders . . . a memorable experience!

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WIND RIVER MOUNTAINS, WYOMING

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HIGH UNTAS WILDERNESS, UTAH

JULY 30 TO AUGUST 9 (LOWER TRAIL)
AUGUST 9 TO AUGUST 19 (SKYLINE TRAIL)
\$220 from Salt Lake City, Utah.
Parties limited to 20.

SAWTOOTH WILDERNESS, IDAHO

JULY 31 TO AUGUST 10; AUGUST 14 TO
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\$220 from Sun Valley, Idaho.
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EAGLE CAP WILDERNESS, OREGON

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SEPTEMBER 10 TO SEPTEMBER 21
\$220 from Santa Fe, New Mexico.
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GREAT SMOKIES SADDLE TRIP

The spring saddle trips in the Great Smoky Mountains National Park, North Carolina, have been so successful that the Association has scheduled another this year, for the dates of May 23 to June 2. Headquarters for the party of 20 will be the Cataloochee Ranch. The itinerary calls for a three-day pack trip from a base camp, including a ride to the crest of Mt. Sterling. Seven nights will be spent at the ranch with rides to Sheepback Lookoff, Purchase Mountain, Paul's Gap, Balsam Mountain and other interesting points. Plan to ride in Smoky land this spring when the colorful wildflowers and flowering trees are in bloom. \$200 from Asheville, North Carolina.

Write or wire for detailed information, itineraries, and reservations.

THE AMERICAN FORESTRY ASSOCIATION

919 Seventeenth Street, N.W.

Washington 6, D.C.

Today there are about 200,000 antelope in the country, with the largest herds in Montana, New Mexico, and Wyoming. Our present-day antelope population is due to the intelligent wildlife management practices which saved the animal from extinction or from becoming nothing more than a zoo species.

The choice of the wild turkey for the second of the stamps in this wildlife series is a good one, too. One species of wild turkey roamed the swamps and forests of the Eastern half of the United States in flocks and droves that ran into the thousands. The vast numbers of these turkeys was a happy circumstance for the early colonists of New England and Virginia; they had in this truly American game bird a tremendously important source of food and one which Benjamin Franklin wanted for our national emblem instead of the bald eagle. Franklin summed up his comments on the turkey and the eagle by saying:

"I wish," he wrote in 1784, "the Bald Eagle had not been chosen as the Representative of our Country; like those among Men who live by Sharpening and Robbing, he is generally poor, and often very lousy. The Turkey is a much more respectable bird, and withal a true original Native of America."

The third stamp in the series has a vignette, showing a king or Chinook salmon leaping the falls of a river on its upstream spawning migration. The selection of a salmon to represent our fishery resources is an excellent one. On the Columbia River alone, the annual catch of all species of salmon is 32 million pounds annually; this catch has a value of more than 17 million dollars. This revenue comes from a self-perpetuating resource—one that needs only the right environment to maintain itself indefinitely and one that will provide perpetual income and recreation for the Nation.

In working out his designs for these stamps, Hines has posed the subjects in typical attitudes. In grouping the antelope, one animal stands so that you can see a bit of its white rump. The turkey vignette shows a bird in flight, and the salmon, as has been mentioned, is depicted on an upstream migration.

Remember that if you should be fortunate enough to come into possession of any one of these stamps with the subject inverted through a printing error, you may have a small fortune on your hands. The in-

verted flags on either side of the shield, the perch of the bald eagle on the thirty-cent stamp of the 1869 issue, give the stamp a listed value of \$8,000.00 for one in an unused condition. Such a sum would provide many trips to areas of outdoor America, where the antelope flashes across the sage-dotted prairies, its white rump patches flashing like a heliograph; where the "gil-obble-obble" of the wild turkey gobbler resounds through the hardwood forests; and where the silvery king or Chinook salmon, weighing as much as twenty pounds, migrates up rivers like the Columbia at spawning time.

Dreams of Many Aprils

(From page 17)

of the bottom by the stream and looked above the cliffs at this blooming tree. I have always admired it because it is a forerunner of all blooming trees in my part of America. The soft April wind blew up among the blossoms and they trembled on the boughs. But I never saw a honeybee among them. It is too early for the honeybees. There were so many thoughts that went through my mind about this tree, which was a friend of my father and mother, and of mine when I was a little boy, and until I grew to manhood. And now the years have passed for my father and mother and are passing for me, yet this tree blooms spring after spring, and brings beauty to hundreds of people who see it each season.

THE WHITEBEAM TREE

The whitebeam tree is a cloud of blossoms now
Above the lichenized cliffs and singing stream;
The young winds tease the blossoms on each bough
In April sun and in the white moonbeam.

The whitebeam is a trembling cloud of bloom
Too early for the hungry honeybee;
White emblem shining in this earth's dark room,
Beacon of beauty for all eyes to see.

The whitebeam is the first to beautify
Our empty land after winter has gone;
Regardless of the troubled earth and sky,
The whitebeam has courage to bloom alone.



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Crestmont Inn calls you to a light-hearted vacation in the Alleghenies. Swim, boat, canoe in the lake. Play tennis, golf, badminton, shuffleboard. Or, fortified with a picnic lunch, explore the woodland trails on foot or horseback. Find a shady nook to read or paint. Or just relax on one of the cool, wide porches and look out over fifty miles of placidly-beautiful hills and valleys.

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| 1½ to 2 feet | 6.75 |
| Hamamelis Mollis (yellow in Feb.) | |
| 3 to 4 feet | 8.75 |
| Cornus kousa (June dogwood) | |
| 18 to 24 inch | 3.00 |
| Albizia jul. Rosea (Hardy Mimosa) | |
| 4 feet | 5.50 |
| Stewartia pseudocamellia | |
| 18 inch | 3.00 |
| Pterostyrax (Epaulette tree) | |
| 12 to 18 inch | 2.75 |
| Franklin Tree (Franklinia) | |
| 3 to 4 feet | 7.70 |

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Parmachenee Belle

(From page 13)

For many years Parmachenee Club was operated on a limited membership basis. Subsequently, it was purchased by a private owner and opened to the public. Because of the club's difficulty of access and high cost of maintenance, the venture was not profitable and the property was sold to the Brown Company of Berlin, New Hampshire, one of the nation's well-known manufacturers of wood pulp, paper, and other forest products.

Landlocked salmon, not originally indigenous to the lake, have been successfully introduced. Thus the fly fisherman has the choice of two of America's finest freshwater species. Among the famous fishing spots on and near the lake are Parmachenee Pool, Rump Pond, and Little Boy Falls on the Magalloway River where President Eisenhower demonstrated his skill, and his sportsmanship by returning to the water the fish he caught.

All the timber land formerly leased by the Parmachenee Club is now owned and managed by the Brown Company. The company's forward looking forestry program, under the direction of Clarence S. Herr, vice president in charge of woods operations, includes protection of the forest from fire, insects, and disease. Moreover, the trees are so harvested that a new crop is always assured. The land will be permanently maintained in productive condition, providing optimum conditions for fish and wildlife.

In some respects, ingress to Parmachenee Lake is scarcely less difficult than it was years ago. Although a dirt road leads into the lake from Wilson's Mills, it is a private company road not open to the public. The reason for travel restriction is quite understandable. With a constant stream of heavily loaded trucks hauling pulpwood to the mill, motoring would be hazardous for the casual tourist not used to off-highway roads primarily for woods operations.

Then too, the problem of protection from fire is ever before the company foresters. Wild fire not only constitutes a threat to standing timber, but to young growth also. Economically, fire can take a terrible toll of harvested wood, cut and stacked in the forest, awaiting trans-

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4. Ask about the law before burning grass, brush, fence rows, or trash.

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portion to the mill. When one considers that a carelessly discarded cigarette can, and actually has, resulted in the loss of a quarter million dollars worth of pulpwood, one better comprehends a company policy that restricts access to its lands. A year's watchfulness by a thousand careful visitors can be nullified in one minute by a single careless smoker.

This is not to say that sportsmen are excluded from the lake and its tributary waters. Egress is still granted under controlled conditions, on application to the company, especially to canoeists and hikers. The club itself is operated during the months of June through September, though no longer on a paying basis. It is now used primarily for officials of the company and its customers, and for special guests such as Mr. Eisenhower and his party.

"Angler! — the term is to me a title of nobility, an order of knighthood open to personal merit alone. Not to every one who casts the fly is it given to belong to this brotherhood. He who would claim admission must be gentle, kindly, courteous, temperate, unselfish; a lover of nature, a pleasant companion, and a true friend — and let us be thankful there are many such."

From *Fly-Rods and Fly-Tackle* by Henry P. Wells (1885)

Southern Fire Conference

(From page 19)

— in New Orleans April 13 and 14 to tackle the wildfire problem.

"A thousand southern business and civic leaders, district attorneys, judges, legislators, county commissioners and peace officers, educators and community leaders will meet with foresters and forestry experts to assess the damage done by wildfires and to consider means of stamping them out.

"Since the bitter statistics show that 85 out of every 100 wildfires in the nation's forests are in the South, many feel that this region-wide effort is long overdue. Particularly since 98 out of every 100 acres lost to fire are in the South, and 94 out of every 100 fires that are deliberately set are in the South.

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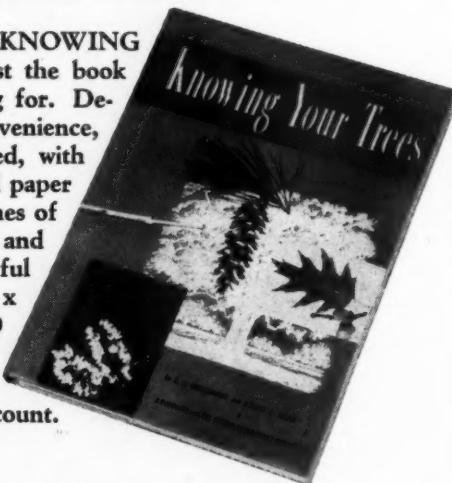
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end of World War II. The value of southern trees—in the forest—has increased as much as 20 times. Once it was thought that only the woods owner suffered when his woods burned.

"Now it is conservatively estimated that for every dollar's worth of timber burned, 7 dollars are lost to the South's economy in payrolls, income and taxes from the sale and distribution of the products that could have been manufactured.

"To stop this staggering loss the Southern Forest Fire Prevention Conference has been organized. In two days of meetings in New Orleans it will review the growth of the wood-using industries, their importance to the South and the rate at which the region's future prosperity is being literally burned up. The conference will discuss what has been done to date in preventing wildfires and then concentrate on programs and methods to arouse Southwide public opinion and action against both the carelessness and deliberate arson which send wildfires raging through the forests.

"Delegates will study existing education and public opinion tools which can be used on a Southwide basis. They will learn how local programs that are successful are operated, and how to apply them in other localities. Laws against woods burning will be reviewed and the methods for catching and punishing those who set the woods on fire will be explained.

In addition to those officially named to the conference by the 16 southern governors, the conference is open to the public. Any interested citizens may participate by registering with any of the 11 sponsoring organizations or directly with Conference Headquarters in New Orleans."

Mission 66 Underway

(From page 23)

approach, taken from the 1957 budget, is the development of Craters of the Moon. For this region \$126,800 would be allocated for a visitors center, a type of building which is used to combine Service headquarters, offices, information services, and museums; \$112,200 for a utility building, which will include such items as repair shops and a power plant; \$49,500 for utilities construction; and \$86,700 for em-

ployee housing. No funds are provided for road improvement in this area as the roads are in fairly good condition, but such funds are scheduled to be included in a later year's budget.

Yellowstone National Park would receive the largest proportion of the first year's appropriation under the plan. Almost one million dollars has been earmarked for the canyon area, which includes relocation of the developed area away from the feature itself — a plan which will be used wherever feasible in Mission 66 operations. Also, funds will be used to improve camping facilities at Yellowstone.

Other major expenditures planned for Fiscal Year 1957 include extensive sanitation improvements in the Snowball Dining Room at Mammoth Cave as well as a \$358,000 visitors center; \$400,000 will be used to develop the quarry at Dinosaur National Monument; and \$600,000 will be spent at Grand Teton National Park for employee housing, utility systems, and visitors center. Employee housing and the development of campsites on the Rio Grande are the primary items in the \$500,000 proposed appropriation for Big Bend National Park. Improvements at Carlsbad Caverns and the Grand Canyon are also included in the 1957 budget.

The financing of Mission 66 at the present time is dependent upon annual Congressional appropriations, but bills have been introduced in the House and Senate which would provide for a long-term appropriation, to continue throughout the 10-year period, thus guaranteeing funds necessary for the completion of Mission 66.

In his letter of transmittal, covering Mission 66, Secretary of the Interior McKay wrote to President Eisenhower, ". . . Carrying forward Mission 66 will result in improved roads, more campgrounds and facilities for visitor use, and should stimulate investment of private capital in modern accommodations. At the same time, it will preserve the historic, the wilderness, and other features of the areas. It will satisfy the demand for more of such ranger services to the public as lectures, exhibits, and guided tours. It will strengthen the Government's partnership with the states, counties and cities in meeting total recreational requirements."

"In short," the letter continued, "Mission 66 covers all the anticipated needs of the Parks, plots a

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Financial Statement, The American Forestry Association

BALANCE SHEET AS OF DECEMBER 31, 1955

| ASSETS | | LIABILITIES AND SURPLUS | |
|-------------------------------|--------------|----------------------------|--------------|
| Cash | \$ 36,630.71 | Accounts Payable | \$ 7,301.18 |
| Accounts Receivable | 4,688.66 | Other Current Liabilities | 1,121.98 |
| Inventories | 19,782.09 | Due Endowment Fund Advance | 18,735.49 |
| Furniture and Equipment (Net) | 1,534.46 | Deferred Income | 55,280.35 |
| Other Assets | 868.79 | Surplus | 248,285.98 |
| Endowment Fund Assets | 287,220.27 | | |
| Total | \$350,724.98 | Total | \$350,724.98 |

INCOME AND EXPENSE ACCOUNT FOR THE YEAR ENDING December 31, 1955

| EXPENSES | | INCOME | |
|-------------------------------|--------------|----------------------------|--------------|
| Membership | \$ 54,483.27 | Membership Dues | \$149,426.08 |
| American Forests Magazine | 128,579.72 | Advertising | 57,727.12 |
| Sales | 14,871.46 | Sales | 21,488.53 |
| Trail Riders | 53,619.22 | Contributions and Bequests | 56,935.00 |
| General Administration | 52,765.15 | Endowment Fund Income | 12,676.59 |
| Projects | 5,043.77 | Projects | 13,904.82 |
| Total Expense | \$309,362.59 | Total | \$317,100.47 |
| Excess of Income over Expense | 7,737.88 | | |
| Total | \$317,100.47 | | |

In our opinion the above condensed Balance Sheet and Income and Expense Account, fairly present, respectively, the financial condition of The American Forestry Association at December 31, 1955, and the results of its operations for the year ended on that date.

SNYDER, FARR AND COMPANY
Certified Public Accountants

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comprehensive and well-balanced schedule of improvement, and starts immediately. It fulfills the pledge you made in the State of the Union Message."

Christmas Eve Burn

(From page 29)

cold front was overhead and a moderate, steady, north wind was blowing. The Weather Bureau predicted that this condition would last for 10 to 12 hours.

Early morning telephone calls were made ordering the crew to get into their "burning" clothes. The Alabama and Florida forestry departments were notified to expect a big smoke starting at 10 o'clock. Torch fuel was distributed to the planned points along the burning lines. At 9:30 a.m. the crew met on the Forest. A small test fire was set and then each torch man was briefed and given his map. At exactly 10 o'clock all three torches started firing. A few minutes after 12 noon all torches were through and well over half of the area was burned. At 2 o'clock over 90 percent of the area was burned. By 3 o'clock the crew tired but satisfied, was back home helping Santa Claus.

APPRAISAL

What were the benefits? Longleaf experts agree that a heavy infestation of brown spot can ruin a stand of seedlings. The established seedlings treated by the Christmas Eve burn were worth at least \$4,000. It is doubtful that half of these would have survived and grown without the prescribed fire. At least \$2,000 worth of seedlings were saved.

What was the cost? The whole job, including diagnosis, prescription, preparation, treatment, and appraisal came to less than \$100.

What were the damages? A seedling survey after the fire showed less than one percent loss in stocking—a value of not more than \$50. Most of the lost seedlings were stunted and heavily infected with brown spot and probably would have died anyway. Their value was more than offset by many fringe benefits, such as hardwood brush control, seedbed preparation, hazard reduction, and a large area burned to prevent reinfection of the reproduction areas.

The *BURNING YARDSTICK* showed that: The benefits of several thousand dollars in brown-spot control far exceeded the burning cost plus the minor damages of the fire.

FREE!

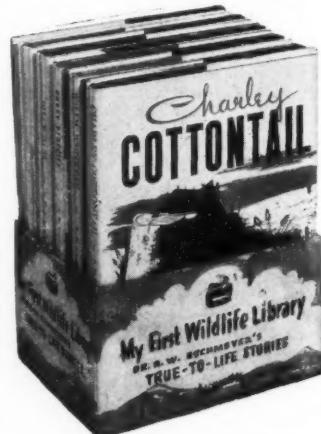
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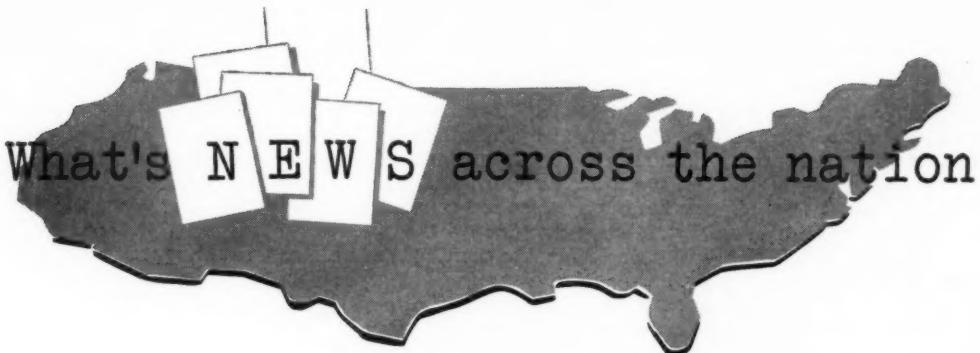
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APPROPRIATIONS HIKES FOR FOUR MAJOR ITEMS IN THE FOREST SERVICE BUDGET for 1957 were urged by Lowell Besley, AFA executive director-forester, before the House Subcommittee on Interior and Related Agencies Appropriations last month. In general, the President's new budget as regards Forest Service responsibilities is "realistic," Mr. Besley said. Using AFA's Program for American Forestry as a guide, he then indicated that four additional increases were indicated. These are:

NATIONAL FORESTS RECREATION — After increasing this appropriation by \$700,000 last year, the increase noted in the proposed new budget is \$470,000. The need for improved sanitation and care of public campgrounds has already been well established, Mr. Besley said. An appropriation of about five and a half million-dollars a year is needed to correct "appalling conditions" with respect to recreational facilities. AFA does not recommend that this entire increase be provided in one year "but we are convinced that an increase at the rate of three-quarters of a million dollars per year will be needed for the next five years in order to bring recreational facilities anywhere near normal requirements," Mr. Besley said. A further increase of \$305,000 over that already provided in the budget was recommended by AFA — in order to bring recreational facilities appropriations to two and a half million dollars for Fiscal 1957.

WILDLIFE RESOURCE MANAGEMENT — Sadly neglected in past years, Mr. Besley noted that funds for the management of this important resource is still pegged at the entirely inadequate \$230,000 which is the same it has been receiving for several years. This should be increased to half a million dollars for Fiscal 1957, Mr. Besley said pointing out that in its Program for American Forestry, AFA calls for multiple use of all resources in the national forests. "We consider the habitat which these forests furnish fish and game as of great importance," he said. "Of course, we all know that a large percentage of the nation's best trout waters are found in these forests. We know that small game, including grouse and squirrels, are found in nearly all national forests and fur bearers, such as beaver, martin, and mink are often common. It is reported that in 1955 hunters and fishermen made more than 11 million visits to national forest areas. Obviously, then, the need and importance of careful management of this habitat grows each year with the increasing public use." However, the present level of financing Forest Service wildlife habitat management permits only one wildlife technician in each of nine of the 10 administrative regions. Each of these men is expected 1) to guide cooperative wildlife work; 2) to give leadership to forest personnel on from seven to 20 national forests in developing and revising plans for wildlife management; 3) to supply information and guidance to a large number of organized wildlife groups; and, 4) to give leadership and guidance to surveys of condition and trends of wildlife habitat and to cooperative surveys of game populations; "Obviously, there are simply not enough men to go around to do all these jobs," Mr. Besley told the committee.

FIRE CONTROL INVESTIGATIONS — An appropriation of not less than half a million dollars for this activity as compared to the 225 thousand dollars now budgeted was recommended by Mr. Besley. "All of us are aware that in 1955 a series of catastrophic forestry and brush fires brought destruction over several million acres in the South and on the West Coast," Mr. Besley said. "To varying

(Turn to next page)

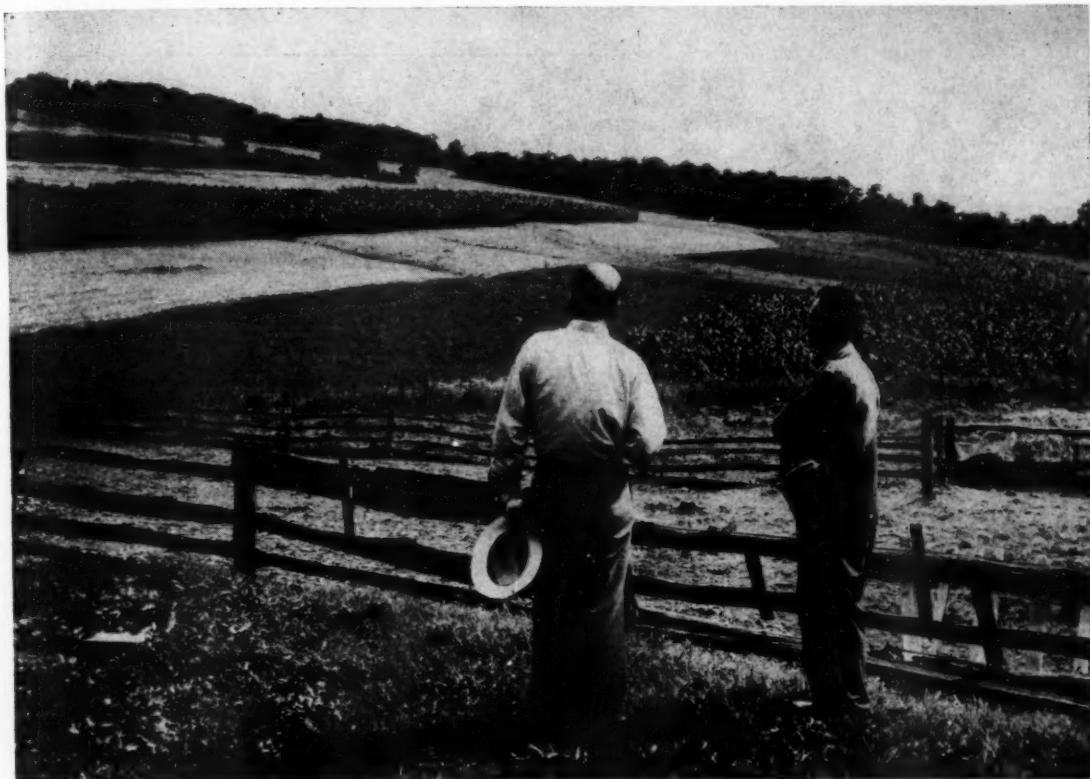
WHAT'S NEWS ACROSS THE NATION—(Continued)

degrees the fire fighting organizations need help in familiar and obvious ways such as more men and equipment to do the job. But they also need the help of modern science and technology to do a more skillful job and to make their efforts buy more effective protection. A well-planned and adequate research program can give us answers to some of the following questions: 1) How much of the present fire fighting effort ought to be devoted to preventing fires as compared with the amount used to control fires after they have started? Some of us think that the reason we have to spend so much money on control of fires is that we are not spending nearly enough on prevention and suppression activities. Research could tell us who is right; 2) How far can we mechanize forest fire fighting and make it pay and exactly what combination of men and equipment is most efficient in stopping fires in a given situation? Can chemicals greatly increase efficiency? We need research to tell us the most effective combinations to use; 3) How much more than at present should we be drawing upon modern technology to improve and supplement fire fighting methods? For example, what is the best use of aircraft to help the ground fighter to gain control of fires and difficult situations? We also need to do a better job of anticipating the bad fire situations that lead to the big losses and we need fire laboratories to establish the natural laws that control the start and spread of fires and to study natural fuels. Our forest fire research program has been starved," Mr. Besley told the committee, "and it's time we did something about it."

FOREST RESOURCES INVESTIGATIONS — A hike in the proposed budget to a quarter million dollars was proposed by Mr. Besley for this activity, or an increase of \$225,626. "The nationwide forest survey included in this item is an essential foundation of all of our forestry programs," the AFA director said. "This project provides the facts on the nation's supply of forest land, the standing timber in each state, the annual growth of timber, losses from fire and other destructive agents and the consumption and potential requirements for forest products in our rapidly growing nation. The Program for American Forestry calls for continuing appraisals of the nation's forestry situation at intervals of about 10 years. To achieve this goal, the forest survey needs to be drastically accelerated. In many areas of the South, for example, and in the Pacific Northwest, 15 or 20 years have elapsed since the first inventory was made. Widespread changes in forest conditions have occurred during this period. The pulp industry in the South and the lumber industry in the West have expanded tremendously and further large increases in forest use are in prospect. On the other side of the ledger, many new forestry programs have been developed throughout the country. It is only good business that we evaluate our forest situation from time to time as a basis for charting both public and private forestry action. The state and federal governments, forest industries, and landowners all need some facts for public programs and for business decisions relating to forest resources. These facts are constantly being made available as the survey progresses for regions, states and localities. The facts are assembled and analyzed on a national basis periodically and made available to all. The recently completed Timber Resource Review furnishes us the most useful forestry document we have ever had in this country and provides the basis for wise forestry planning and a national forestry policy."

AS THE RESULT OF A REQUEST MADE BY THE COMMITTEE LAST YEAR, Mr. Besley provided it with a summary table showing how much money is in the proposed budget and the minimum amount AFA would like to see adopted on the basis of its Program for Forestry. Readers should know that practically every appropriation increase recommended by AFA has been adopted by the Congress — a clearcut indication that the legislators are giving this document very careful consideration in their deliberations. One member of the committee told Mr. Besley last month, "We look forward to your appearances before our committee. We know that you come here as the representative of citizens with absolutely no ax to grind. We know that you come here to state the facts as AFA sees them in reference to forestry needs on the land. Your testimony is very helpful to the committee in its realistic and constructive approach. In brief, the AFA carries a lot of weight with us."

(J.B.C.)



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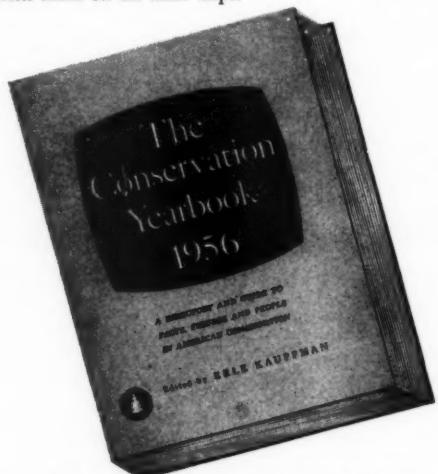
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Feature Photo of the Month

Photos used on this page will be of unusual rather than esthetic qualities and subject matter will be restricted to scenes, events, objects or persons related to the use, enjoyment or unique aspects of our renewable natural resources. For each picture selected AMERICAN FORESTS will pay \$10

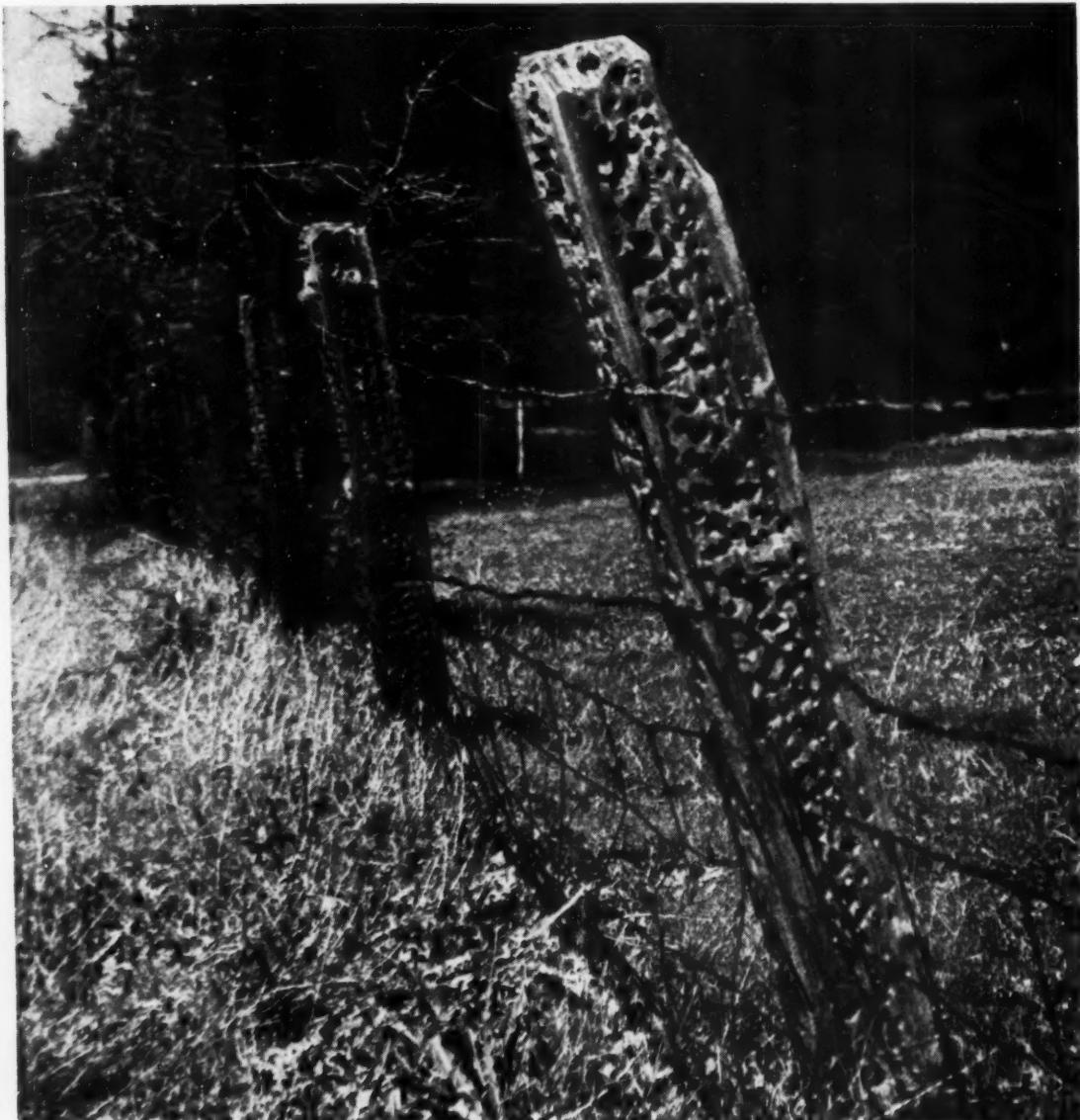


Photo submitted by Mrs. Olivia Young, Pacific Grove, California

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